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MAIL BOAT FOR DETROIT MARINE POST OFFICE.

One of the most interesting phases of the great postal service of the United States is the marine post office at Detroit where passes for eight months during the year the greatest merchant fleet in the world devoted to a single industry. It is well worth a trip up the lakes to witness this single feature of marine mail delivery at Detroit. Such is the rush and hurry of latter-day business that the steamers do not stop to receive mail. It has to be delivered to them while they are in motion, and the hazard of the undertaking is minimized only by the skill, acquired through habit, of those who deliver the mail. The little vessel, of course, has to throw a line to the passing steamer, and is by that act taken instantly from a state practically motionless into a speed approximating twelve miles an hour. To keep one's equilibrium and attend to routine affairs of business as well under such circumstances is not an ordinary matter.

Upon the recommendation of post office inspectors appointed by the post office department to investigate the necessity of a new boat for marine service on the Detroit river, specifications were drawn and propositions submitted to build a boat according to plans prepared by the post office department at a cost of about \$35,000. Bids were advertised for upon the basis of a ten-year contract. One bid was \$75 a day and another bid was \$47 a day, which was the lowest bid received, and the inspectors recommended that this be accepted. This would cost annually about \$12,000 and an appropriation was asked for the amount. Oddly enough the appropriation was defeated before the post office committee in the house of representatives by Congressman Henry McMorran of Port Huron, whose local habitation alone ought to have taught him better. The bill then went to the senate and the \$12,000 was restored in the senate and passed. Of course, it now goes to the conference committee of both houses. Mr. McMorran is still opposing the appropriation and insists that about \$5,000 is sufficient.

Probably the most difficult thing in the world to combat is ignorance because it affords nothing to get a grip upon. Mr. McMorran certainly cannot understand this marine service or the importance of it. It is by no means a local service. The Detroit marine post office is the common property of the great lakes, and it gives twenty-four hours of continuous service from the beginning to the close of navigation. The movement of the great fleets of lake vessels is practically directed through the Detroit marine post office. Vessels leave the upper lake and lower lake ports, light or loaded, without specific direction as to their ultimate destination. They are

usually intercepted at Detroit by letter or telegram. Where instructions are sent by telegram the telegraph office attaches a two-cent stamp and it thus becomes mail and is delivered through the marine post office. The Detroit marine post office handles on an average about 500,000 pieces of mail during the season. Last year being a short season about 447,000 pieces were handled, of which from 75 to 80 per cent was first-class matter. Mail is delivered on an average to 22,000 passing boats during the season. Estimating twenty to a crew, which is conservative, would make a total of 440,000 people served by this post office. Moreover, the Detroit marine post office has an average constantly on hand of 10,000 pieces of first-class mail every day. This is more mail than a half dozen second-class offices would average to have on hand, and yet the government does not stint to build post offices and furnish vaults for the safety of this mail. How much more necessary it is that a safe vehicle should be provided for the delivery of mail at the marine post office. It has to contend with a thousand elements of danger which do not obtain in the ordinary post office. It has to contend against stress of weather, liability of collision and a hundred and one features which do not enter at all into the ordinary routine of mail delivery. This service is actually so hazardous that no insurance company will insure the steamer engaged in it. Indeed several times has the present steamer Florence B. been put out of commission and the contractor been obliged to charter a tug to take her place at great expense. In spring and fall when the weather is severe, the men of the mail boat have to dress like whalers, with oil cloth suits, and it is a common thing for their clothes to be frozen stiff.

The Detroit marine post office is a floating mint because money is constantly being dispatched to and from vessels, and it seems very strange indeed that there should be any opposition whatever to the appropriation to provide a staunch and reliable vessel for the service. Mr. McMorran is evidently of opinion that any steam launch will do for this service, but there are no such vessels obtainable. The days of steam yachts of requisite size have passed. Naphtha launches have taken their place. Consequently there are no suitable steam yachts that could be bought for this service, and even if they could, a lightly-built pleasure craft has neither the strength nor the capacity for it. What is needed is a vessel that is safe for both the men and the mail, and has sufficient capacity to allow the men to work to advantage. It is very curious indeed that a man from a neighboring district, who ought to be familiar with the service, should oppose this appropriation.

DEVELOPMENT OF STEAM NAVIGATION.

An Interesting Address on Development of Communication by Sea—Parsons and Rateau Turbines—International Sailing Ship Owners' Union.

GLASGOW, April 14.—An interesting address on developments in the means of communication by sea during the nineteenth century was delivered here a few days ago, to the Royal Philosophical Society of Glasgow, by Mr. Robert Caird, LL.D., of the ship building firm of Caird & Co., Greenock. Dr. Caird said that the period covered practically the hundred years of the existence of the society which was founded in November, 1802.

Symington's Charlotte Dundas was then laid up a few miles away on the Forth and Clyde canal, after having successfully demonstrated the power of steam to tow a couple of barges at a fair speed. The application of steam power to propulsion was a direct result of Watt's discoveries and improvements on the steam engine. The attempt of Henry Bell proved the real starting point of the great industry of marine engineering on the Clyde. In 1812 he had the Comet built for him by Wood of Port Glasgow. She was a tiny craft of 25 tons, measuring 42 ft. long by 12 ft. beam and drawing 5 ft. 6 in. of water. Her engines were made at Greenock by Anderson & Campbell—a firm which, as Dr. Caird humorously remarked, still dragged out "a precarious existence" under the style of Caird & Co. To illustrate the century's progress he contrasted the Comet at the one end of the scale with the Baltic, the largest vessel under construction at the date of the society's centenary celebration. The Baltic was 725 ft. long, 75 ft. beam, 49 ft. deep and measured 24,000 tons gross. Her cargo capacity was 28,000 tons, and her displacement at load draught 40,000 tons. The speed for which she was designed was from 16½ to 17 knots, and to propel her at that speed she was fitted with two sets of quadruple expansion engines, developing 13,000 I. H. P. This huge vessel was thus in comparison with the Comet 1,000 times larger, 4,000 times more powerful, and 3½ times faster, while the Kaiser Wilhelm II. had 15,000 times the power of the Comet, and steamed five times faster. Surely so great an advance was worthy of the wonderful century

that had gone. It implied continuous activity and progressive development in the arts which contributed to the construction and equipment of steam vessels and their machinery, alert recognition of the ever-changing conditions which each fresh step imposed, and sublime courage in sacrificing whole fleets obsolescent before pride in them had time to cool.

The Atlantic ferry, Dr. Caird said, had naturally been the scene of the greatest developments in marine transport. The first vessel to steam all the way across was the Royal William, of 830 tons, in 1833. She took 38 days to cross from Quebec to London at a time when sailing ships were making the

passage in from 17 to 22 days. It was impossible to overrate the courage and enterprise of the pioneers of that service in the face of the difficulties and discouragements they had to encounter—difficulties arising not only from perils of the sea and the crude nature of the apparatus at their command, but also from the scepticism of contemporaries, even of learned scientists. They might remember Dr. Lardner's famous, if rash, prediction in 1835, "As to the project, however, of making the voyage directly under steam between New York and Liverpool, it was," he had no hesitation in saying, "perfectly chimerical, and they might as well talk about making a voyage from New York or Liverpool to the moon." His calculation was based upon an estimate of the fuel required



REACHING PORT—DROPPING DOWN TO MOORINGS.

on so long a passage, and the inability of vessels of ordinary dimensions to carry it. Within three years, however, the Sirius and Great Western, generally considered the pioneers of the Atlantic steam service, successfully accomplished the supposed impossible feat, and reduced the passage from 17 to 13½ days. They were wooden paddle-steamers, with side-lever engines of what might be called the land type, and consumed respectively 24 and 33 tons of coal per day, averaging about 8½ knots. After referring to what he called the momentous change from wood to iron as the principal material of construction in ship building, Dr. Caird said that the most striking feature of the progress made was that the passage from New York to Liverpool was now made in little more than one-third of the time occupied in 1840, and that the time-saving was accompanied by an increase in tonnage of 12 times,

and in power of 35 times. Passing to speak of the effects of the opening of the Suez canal, he said that that project necessitated a complete reorganization of the business of the Peninsular and Oriental Co. and the reconstruction of its fleet, and had also resulted in the gradual but unrelenting suppression of sailing ships by steam even on the longest routes, due in great measure to the continuous improvements in marine engineering, tending to increased economy of fuel, to the multiplication of coaling stations, and to cheap conveyance of coal to distant points. The statistics of last year showed that, while 622 merchant steamships of over 2,200 tons average were built in this country, only 72 sailing ships of 700 tons average were added to the register—that is to say, only 1-28th of the new tonnage was sailing. Referring to recent changes, Dr. Caird said that the greatest advance in steam navigation since the days of Watt, although, commercially speaking, it was still on its trial, was the steam turbine. The credit of applying that principle to marine propulsion was doubtless due to the Hon. Charles Parsons, whose Turbinia was a revelation to engineers. Just as in the case of other epoch-making improvements in marine engineering, however, a long and discouraging series of experiments extending over many years, had to be made before the turbine became practicable. It had been a source of regret that the leading position for speed on the Atlantic had for the last five or six years been wrested from Britain by Germany. The only British Atlantic mail ship of high speed, after the Campania and Lucania was the White Star Oceanic, which made no attempt to lower the record time, while the Germans, with their Kaiser Wilhelm der Grosse, Deutschland, Kronprinz Wilhelm, and Kaiser Wilhelm II., raised the ocean speed from 22 to nearly 24 knots, and to do so had had to increase tonnage and horse power by over 50 per cent. He did not think it was generally realized that the crack German mail steamers were so enormously ahead of our latest and best. It had been argued that the expense accompanying such revolutionary developments made them prohibitory, but they might read the annual financial report of the Nord-Deutscher Lloyd Co. recommending a dividend of 6 per cent on their ordinary shares, a rate some of our more reactionary lines would be glad to be able to show. It was a subject of congratulation that the Cunard company, with the aid of his majesty's government, was about to make an effort to regain our lost supremacy.

ORDERS FOR BABCOCK & WILCOX BOILERS.

The Babcock & Wilcox Co., Glasgow, have received orders from the United States navy for fifty boilers, amounting to about 50,000 I. H. P., for several battleships and cruisers, viz.: cruiser Vermont, gunboat Dubuque, gunboat Paducah, battleship Indiana, monitor Monterey, and battleship Minnesota. The Babcock boilers for the battleship Indiana will replace eight Scotch boilers, and those for the monitor Monterey four water-tube boilers of the Ward type and two Scotch boilers, installed when the vessels were first built. The United States navy board will, we are advised, also fit Babcock & Wilcox boilers on the cruisers Georgia and Virginia, each of 19,000 I. H. P. in place of the Niclausse boilers with which it was originally intended that the ships should be fitted.

The International Sailing Ship Owners Union is steadily progressing, and some 10,000 tons of British shipping only are required to complete the 75 per cent stipulated for by the French and German owners, in connection with the formation of an international union. Those interesting themselves in the movement are quite satisfied with the progress they have made and they hope shortly to announce that, so far as Great Britain is concerned, the required support is secured.

The tow boats, or tug steamers, in this part of the world have hitherto been almost invariably side-wheelers, but the growing size of vessels is creating a demand for screw tugs. There has just been launched from the works of Alex. Stephen & Sons an exceptionally handsome screw tug steam-

er as an addition to the fleet of tugs owned by Steel & Bennie of Glasgow. The new vessel is intended for their harbor trade, and for scouting purposes on the Firth. She is 105 ft. long by 21 ft. beam and 11 ft. deep, and is expected to obtain a high rate of speed. On deck and in cabins all the fittings are up to date, and handsomely finished. The master and engineer have cabins and mess room aft, while the crew are berthed in a roomy fore-castle in 'tween decks forward, with Hoskin's iron patent berths. Each compartment is provided with heating arrangements, lockers, wardrobes, etc., and a neat wheelhouse is fitted on the flying bridge for the steersman, with standard compass, and steering wheel to operate the steam steering gear which is placed in a house below. A strong steam windlass is fitted forward, with quick warping ends and drums. She is to be propelled by compound surface-condensing engines supplied with steam from a large cylindrical boiler at 110 lb. working pressure, while her bunkers are capable of taking in fully a fortnight's coal supply. She is constructed in accordance with Board of Trade requirements for certificate in respect of life-saving appliances, including lifeboats, in addition to the crew's working boat.

The French naval expenditure estimates for 1904 show an increase on the expenditure of 1903 of £209,605, the total sum being £12,722,752. Five years ago the estimates were about twelve million sterling, so that the rate of increase is small. For the maintenance of the fleet in commission there is an increase of £48,000. The votes for wages and material for new construction in the government yards show decreases, which are fully compensated for by an increase of £110,400 on the sum allowed for contract ship building, the total slightly exceeding two million sterling; whereas, five years ago, it was only £1,339,000. There is also an increase in the vote for guns. In the great majority of the items there is practically no change. The estimates must go before the budget committee, but there is not much likelihood of any serious change in the total.

PARSONS AND RATEAU TURBINES.

The French torpedo boat now being fitted with Parsons' steam turbines is designed for the testing of these in competition both with steam engines, and with turbines on the Rateau principle. The Rateau turbine is not so well known in this country as in France, where fifty of 25,000 H. P. are in use or in process of construction, and of these 6,200 I. H. P. are for ship-propulsion. The two boats fitted with Parsons' and Rateau turbines are practically alike. The dimensions of the vessels are: Length 129 ft. 7 in., beam 13 ft. 7 in., and, with a draught of 8 ft. 2 in., the displacement is 94 tons. Normand boilers are fitted, and on each of three shafts there is one go-ahead turbine for compound expansion of steam, and a maximum of 1,800 I. H. P. The fourth turbine, mounted on the central shaft, is for reverse motion. Each shaft has only one propeller. Following upon experience in Britain, French engineers started with the idea of three propellers on each shaft, but the general opinion now favors the single screw. The French torpedo-boat is to have a radius of action of 20 miles at the full speed of 25 knots, and of 1,800 miles at 10 knots. The armament consists of one deck tube for launching torpedoes and two 1-pounder guns. The vessel was ordered from Normand in October, 1902, and will cost £22,425.

THE OLD STEAMER INDEPENDENCE.

Editor MARINE REVIEW: Referring to your issue of April 21, wherein was written an account of the old steamer Independence, will state that an error was made, for the article states this steamer was built in 1846, whereas she was built on the north bank of the Chicago river, east of where Rush street bridge now is, in the year 1843, and the writer made the first trip she ever made.

Yours truly,

Chicago, April 22, 1904.

JOHN PRINDIVILLE.

LIVERPOOL SHIPPING LETTER.

LIVERPOOL, April 18.—The arrangements made by the London & South Western Railway Co. for dealing with the American mails on their arrival at Plymouth per the American Line steamers were successfully carried out for the first time on Saturday last when a considerable number of travelers from New York, as well as the mails, were transferred from the St. Louis to the new ocean quay station at Stonehousepool. A special train ran to London without a stop, breakfast being served en route, the 230 miles being covered in 252 minutes. The Great Western train left Plymouth at 4:59 a. m. on Saturday and reached Paddington at 9:17, one hour in advance of time. This beats all records on the Great Western railway, and the train was so much before time that the post-office vans for the mails were not in attendance. The St. Louis, which had made her fastest voyage across the Atlantic, her average speed being 20.9 knots per hour, afterwards proceeded to Cherbourg, where she landed a much larger number of passengers, the majority leaving by special train for Paris.

The parliamentary return just issued by the British post-master general is interesting reading just now when so much attention is being paid to the time occupied in the transit of American mails. It appears that the fastest westward passage by an Atlantic mail steamer was accomplished by the Cunarder *Lucania*, which, leaving Queenstown on Aug. 23, delivered her mails on Aug. 28, the transit being completed in 5 days, 17 hours, 15 minutes. On the eastward passage consistently good running is recorded by the German steamers, *Deutschland*, *Kaiser Wilhelm II.*, *Kaiser Wilhelm Der Grosse* and *Kronprinz Wilhelm*, the best time being attained in September by the *Deutschland*, which ran across in the remarkably short time of 5 days, 14 hours and 45 minutes to Plymouth. The chief feature of the report is the very poor speed of many of the vessels entrusted with mails by the British post-office, as compared with those selected by the United States postal department to carry the mails to this country. In thirty cases, the steamers carrying British mails westward took ten days or more on the voyage, whereas on the eastward journey, in only one case did a mail steamer occupy ten days, namely the American liner *Friesland*. The eastbound steamers as a rule crossed in six, seven, or eight days, and greater regularity was thereby attained in the delivery of the mails.

INTERNATIONAL UNION OF SAILING SHIP OWNERS.

Within the last few weeks there have been many doubts and fears that the efforts being made to form the International Union of Sailing Ship Owners would end in failure, and not without good grounds for it is common knowledge that the greatest difficulty has been experienced in obtaining the adhesion of 75 per cent of the British sailing ship tonnage which was the main condition of the movement going forward. I am, however, able to say that this total has now been subscribed, and the union actually formed by the enrolment yesterday of the tonnage owned by Messrs. Samuel Wakeham & Sons, one of the Liverpool firms who have up to now held out against the combination. Messrs. Wakeham have confirmed their own signature, so that the union is at last a fact. Two other Liverpool firms who have so far held aloof are said to be now reconsidering their position and it is expected every day that passes will now see further additional tonnage obtained, for the owners still outside are too few to compete against the union, and will no doubt be anxious to share any benefits that it may confer on owners, rather than be in the position of outsiders. The next step will be to call together the international committee in London which is empowered to fix freights and to enforce them by heavy financial penalties against disloyal members. The object of the union is to make freights more remunerative than at present, and vessels will be laid up as a last resort to obtain paying freights. A difficulty in the successful working of the

union is that French owners are paid bounties when their ships run, which they lose when these ships are idle, consequently they will need to be recouped at the expense of the British owners when and if their vessels are laid up, but it is understood this difficulty has been solved by mutual agreement, and the promoters of the union do not attach much importance to the racial question and the international jealousies that may be created in the attempt to reconcile the interests of British, French and German owners. Liverpool is to have three representatives on the international committee. The union comprises over 7,000,000 tons of the finest British and foreign steel sailing ships engaged in the long voyage deep sea trade, and it is expected that the Norwegians and Italians will also throw in their lot, though they are not necessary to the success of the union.

Supplementing their passenger service from Liverpool to Australia, the White Star Line have decided to commence a new service of freight steamers from Liverpool to the Colonies. At the present time, they have five of their liners, viz., *Afric*, *Medic*, *Persic*, *Runic* and *Suevic*, running a regular monthly passenger and cargo service, and the new freight service will be inaugurated by the steamer *Cufic* sailing from Liverpool on May 21, and will be followed by the steamer *Tropic* in June. Both of these vessels are of 8,200 tons, fitted with twin screws and built by Messrs. Harland & Wolff of Belfast. They were formerly Leyland liners and have been taken over by the White Star Line. They will go direct from Liverpool via the Cape of Good Hope, but will not call at any of the South African ports, as is the case with the passenger steamers.

Since the reference made at the Cunard shareholders meeting last week by Lord Inverclyde to the agreement entered into with the Hungarian government concerning emigrants to the United States, there has come to light some important particulars which show that the Cunard company are guaranteed a minimum number of 30,000 emigrants per annum. Should that minimum not, however, be reached, the company will have a right to an indemnity of four guineas for every person below that number. The price to be charged for the passage is £7 10s 6d and in case of necessity extra steamers will be put on, or emigrants will, for the same figure, be conveyed to New York via Antwerp or Liverpool. In recent years Hungarian emigrants have totalled about 100,000 per annum, and should the number sink below a constant level of 50,000 a year, the Hungarian government have power to denounce the agreement which is for ten years. All artificial stimulation of emigration will be strictly prevented, and the Cunard Line will convey none but voluntary emigrants.

In this connection, an authoritative statement has just been made concerning the new steamship service between Baltic ports and New York. In a despatch received at the British foreign office, H. M. consul at Stettin reports that a new monthly steamship service from Stettin to New York via Helsingborg, Goteborg, and Christiansand has been inaugurated by the Hamburg-American Line and the North German Lloyd. The return voyages will be made via Christiania and Copenhagen. The vessels used for this trade will be large and comfortable freight and passenger steamers carrying over 1,000 steerage passengers. This new service has been opened in order to monopolize the extensive emigrant traffic from Denmark, Sweden and Norway to the United States of America which has been hitherto enjoyed by British steamship lines via Hull and Liverpool, or Glasgow. The first vessel, the steamer *Adria*, is to be despatched by the Hamburg-American Line this month to be followed by the steamer *Willehad* of the North German Lloyd. The two above named steamship companies will arrange alternate monthly sailings by one of their respective vessels.

The Liverpool Underwriters Association has just issued a very valuable list of salvage awards made by the admiralty court during the three months ended March 31 last. From

this it appears that awards were given in twenty cases the total amount awarded being £26,565. By far the biggest award was that made to the Liverpool steamer *Shimosa* (New York & Oriental Steamship Co.) for the salvage of the Italian steamer *Sardegna* while on a voyage from Genoa for New York in June last and was picked up disabled, having lost her propeller. The next highest award was that of £2,850 awarded in the case of the salvage of the Liverpool steamer *Lake Michigan* after her collision with the *Matterhorn*.

A remarkable race from San Francisco to Queenstown has just entered between the British ship *Loch Carron* and the French ship *Jules Sommes*. They arrived in Queenstown on Thursday. The former vessel sailed from San Francisco early on the morning of Dec. 24, last, and the French ship during the evening of the same day. The latter overtook the Britisher, and during the passage exchanged congratulatory signals. On the 18th of last month they finally parted company and saw no more of each other until Thursday, when the British ship arrived at an early hour in the morning, and the Frenchman about eight hours afterwards. Both vessels made the passage in the fast time of 112 days.

I learn that the Cunard liner *Caronia*, now in a forward state of building, is being fitted with the Stone-Lloyd system of instantaneous closing water tight bulkhead doors. By the simple touch of a lever in the captain's room on the bridge, the whole of the bulkhead doors in the ship beneath the water-line can be instantaneously and simultaneously closed, and the extra confidence given to passengers by the knowledge that this can be done will doubtless lead to the Cunard company's departure being followed by other British liners.

It may interest some of your readers who are watching the efforts being made by Britishers to develop trade with the colonies to learn that a new departure has been made this week in the New Zealand trade. The service of sailing ships which has been maintained for many years by Messrs. Gracie, Beasley & Co., White Star Line, and Messrs. Shaw, Savill & Albion Co., from Liverpool to New Zealand has been augmented by the despatch of the fine new twin screw steamer, *Matutua*, 7,000 tons gross register, which is the first steamer loaded from Liverpool to New Zealand. It is intended that other steamers will be placed on the berths as required by the trade and these additional facilities are evidently being fully appreciated by shippers, for I learn that this first sailing of a steamship was fully loaded, even to the exclusion of some cargo. The *Matutua* has been loading in the White Star berth at Canada dock, and she will most certainly prove a valuable addition to the service of freight and passenger steamers which has for many years been run by the White Star Line and Shaw, Savill, Albion & Co., from London to New Zealand via the Cape of Good Hope.

RETURN OF THE DISCOVERY.

The British antarctic exploration ship *Discovery* and the relief ships *Morning* and *Terra Nova* have arrived at Lyttelton, New Zealand, on their way home. The *Discovery*, under the command of Com'dr Robert F. Scott, left England in August, 1901. She has thus made a cruise of two years and a half, of which more than two years have actually been spent on the scene of her operations and in the active prosecution of the work she was sent to perform. Eleven months after she left England an auxiliary ship—the *Morning*—was despatched to replenish the stores of coal and other necessities, or in case of need to afford assistance in any required form. She found the *Discovery* in January, 1903, and returned to New Zealand in March, reporting all well and bringing accounts from Com'dr Scott of the work that had been done. Though only one man had been lost, owing to an unfortunate accident, the staff and crew must have suffered considerable privation, and must have been in rather serious peril, since part of the supplies had gone bad, and all the dogs, so indis-

pensable for sleigh expeditions, had in consequence been lost. After revictualling by the *Morning*, the *Discovery* was in a position to spend a comfortable winter, but was too completely frozen in to exercise any choice in the matter of returning with the relieving ship. It was therefore necessary at once to arrange for a second relief expedition, upon a scale fitted to deal with the contingency that the *Discovery* might have to be abandoned altogether. That expedition was undertaken by the admiralty, which declined, for divers reasons, the co-operation of those who originally directed the operations. A third ship was bought—the *Terra Nova*—which, together with the *Morning*, formed a relief expedition capable of dealing effectively with a situation which had become serious. Fortunately all three ships have now returned in safety to New Zealand.

Naturally Com'dr Scott is reserving for his return the full narrative of his last year's experiences, but the brief outline he has given has created in geographical circles the most favorable estimate of the work accomplished. There can be no doubt whatever that, so far as geographical results are concerned, the British expedition easily bears away the palm from all its rivals. Indeed, it is a somewhat remarkable fact that of the other three expeditions the Scottish was the only one to enter the antarctic circle. The scientific observations made by the other expeditions will doubtless prove to be of the greatest value, but none of them has made any very material contribution to the general knowledge of the great land masses which are believed to occupy the largest part of the area around the Southern Pole. The sledge journeys made by Com'dr Scott and other members of the British expedition during the two years of the *Discovery*'s stay in M'Murdo bay have determined the fact that Victoria land extends indefinitely to the southwards and westwards as an immense ice-covered plateau some 9,000 ft. above sea level, and that to the east of Victoria land there is a great arm of the sea penetrating far into the heart of the Antarctic continent. It is, of course, not determined whether the land discovered by the British expedition to the eastern extremity of Ross's barrier is continental or polardic, and many expeditions will probably be necessary before our knowledge of the land masses of the South Polar area at all approaches the knowledge we now have of the land masses of the Arctic region. But the theory of a continental land mass at the Southern Pole is greatly strengthened by Com'dr Scott's remarkable sledge journey due west from the *Discovery* to a distance of 270 miles, a performance scarcely, if at all, less wonderful than his sledge journey over the sea ice in the previous open season to 82 degrees 17 minutes south latitude, which recently secured for him the patrons' gold medal of the Royal geographical society.

It is worthy of note that the *Discovery*, which was the first vessel to leave Europe to take part in the great Antarctic campaign, is also the last to return, German, Scottish, and Swedish expeditions having all come into touch with civilization while the *Discovery* was still in the Antarctic. Of the four expeditions taking part in the campaign, the Swedish alone sustained any serious loss in the foundering of the Antarctic more than a year ago.

According to a Reuter's telegram from Christchurch, New Zealand, Com'dr Scott emphatically protests against the despatch by the admiralty of the *Terra Nova*, which he declares to have been a wasteful expenditure of money. He says that had the proper position of the *Discovery* been made known, it would have been obvious that she was perfectly safe, and no assistance beyond that which the *Morning* could render was requisite.

The steamer *Simon Langel* has arrived at the yards of Abram Smith & Son, Algonac, for repairs necessitated by her being afire the last trip of last season while at Duluth. Fire started around engine and reached about 40 ft. forward of boiler house before being extinguished.

A LESSON, WELL KNOWN, BUT NEGLECTED.

The two deplorable disasters that occurred on the Long Island coast this winter could have been avoided if the lead line had been used—and probably most of the lives saved, had the ship wrecked been provided with life-preservers. When the four-masted schooner Augustus Hunt of Bath, Me., went ashore near the Quogue life-saving station on Jan. 21, on a misty stormy night, heading directly for Shinnecock light, —and when the question came up among the captain and officers what light it was, whether a steamer's or a lighthouse, the point was argued and the vessel stranded. Had the lead been thrown over the side, it would have shown about 6 fathoms of water and would have settled the point in question at once. As it was no leadline was used at any time.

The vessel broke up quickly. In the morning the wreckage was all along the beach. Eight lives were lost and two saved by the life-savers who had worked hard trying to rescue the unfortunates. The vessel, however, could not be reached with the Lyle gun and it was impossible for the life-savers to launch their boat.

Had the Hunt been provided with distress signals she could probably have been reached with a boat as the surf was not so dangerous when the vessel first struck, but over an hour elapsed before she was discovered by the patrol, and then could only be seen dimly through the dense fog that was setting in. Had life-preservers been worn by the unfortunates, no doubt some of them could have been rescued, but as it was, they had to exert all their strength in trying to keep afloat. The two men rescued came ashore on a piece of wreckage, and only after great personal risk on the part of the two life-savers that went into the surf after them were they rescued.

The second wreck this winter on Long Island entailing loss of life, was that of the three-masted schooner B. C. Cromwell of Portland, Me., that struck on the bar near the Bellport life-saving station, Feb. 22, during a misty night heading directly for the beach. By 11 o'clock next morning nothing was left of the vessel. The record stood two lives saved, six lost, vessel and cargo a total loss, and why? Because the leadline had been neglected.

Had a cast been taken once an hour the vessel would not have gone ashore—not on a coast like that of Long island that has a gradual slope.

Distress signals made from oakum and oil were burned, but when the life-savers arrived near the place where the vessel was supposed to be she could not be seen. The crew had been compelled to take to the rigging where nothing but a coston or similar signal could be used, and therefore no response to the life-savers' signals was made. Lines were fired over the vessel, however, firing being done by ranges, made whenever the fog would lift sufficiently for the vessel to be seen, but on account of the lumber and wreckage in the surf, proved useless. The boat was launched to the westward of the wreck, rowed to within about 30 or 40 yards, and driven ashore stern foremost about a quarter of a mile east of the vessel; the 500 yards to the vessel was like rowing miles against the sea and set. Another attempt was being made, when a man was seen coming ashore on a piece of wreckage, and six others on another. The first man was rescued at great danger and many bruises to the life-savers, but of the six others only one was rescued—one by one the unfortunate men had been washed off. As they were weighted by oil clothes and boots, and had no life-belts on it was a struggle for them to keep above water much less to swim and regain the piece of wreckage. The man that was rescued out of that party became unconscious when grasped by the two gallant surfmen that risked their life for him, as the surf was a heaving mass of lumber. One of the men was so severely injured by wreckage that he may never be able to resume his duties, and suffering is in store for his family and himself during June and July, two months when, under

present regulations, nothing can be done for him. He receives no pay, and is unable to work.

Why is it that so many old ship masters neglect using the lead when running along the Jersey or Long island shores in thick weather? On shores where the current changes with the wind and their only and absolute safety is in the leadline? Why do ship owners not provide life-preservers for the crews of coasting vessels when not compelled to do so by the government or neglect to provide distress signals that are always ready? Disasters might be avoided and lives saved, at a little trouble and small expense, especially when considering the enormous gain.

A. F. A. DE OTTE.

SHIP BUILDING IN THE UNITED KINGDOM.

From the returns compiled by Lloyd's Register of Shipping, it appears that, excluding warships, there were 398 vessels of 988,664 tons gross under construction in the United Kingdom at the close of the quarter ended March 31, 1904. The particulars of the vessels in question are as follows, similar details being given for the corresponding period in 1903 for the purpose of comparison:

| Description. | March 31, 1904. | | March 31, 1903. | |
|-----------------------|-----------------|----------------|-----------------|----------------|
| | No. | Gross Tonnage. | No. | Gross Tonnage. |
| Steam. | | | | |
| Steel | 351 | 973,121 | 376 | 962,410 |
| Iron | 1 | 170 | 3 | 585 |
| Wood and Composite.. | 1 | 220 | 3 | 370 |
| Total | 353 | 873,511 | 382 | 963,365 |
| Sail. | | | | |
| Steel | 26 | 13,316 | 27 | 9,464 |
| Iron | 1 | 260 | 1 | 260 |
| Wood and Composite.. | 18 | 1,577 | 15 | 1,597 |
| Total | 45 | 15,153 | 43 | 11,321 |
| Total Steam and Sail. | 398 | 988,664 | 425 | 974,686 |

The tonnage under construction is now about 90,000 tons more than it was at the end of December, 1903. Compared, however, with the total reached in September, 1901, which is the highest on record, the present figures show a reduction of 425,000 tons, or 30 percent. Of the vessels under construction in the United Kingdom at the end of March, 314 of 741,390 tons are under the supervision of the surveyors of Lloyd's register with a view to classification by this society. In addition, sixty-three vessels of 160,173 tons are building abroad with a view to classification. The total building at the present time under the supervision of Lloyd's register is, thus, 377 vessels of 901,563 tons.

The United States senate passed the Panama government bill in the twinkling of an eye last week. Senator Morgan had for the twentieth time demanded to know why the president had not paid Panama the \$10,000,000 which congress had authorized to be paid and had taken his seat when President Frye promptly put the bill on its passage and with a half dozen yeas from the handful of senators present the measure was passed. This closes the last gap between the initiation of the canal project and actual work. The bill provides that on the payments to Panama and the new canal company the United States shall take possession of the 10-mile wide strip running 3 miles out into the Caribbean sea and the Pacific and embracing the islands and the Bay of Panama. The canal commission is empowered to exercise on this strip all the powers granted to the United States for the control, use and occupation of ceded land. The immigration laws of the United States are substantially enacted for the zone. The commission has the appointing power and pardon power for the canal territory. One of the commissioners is to be designated by the president as governor and is to make his permanent residence on the isthmus.

NEW SHIP YARD FOR MEXICO.

A dispatch from Mexico City says that a new ship building company, known as the Naval Construction Co. of Mexico, has been organized there with a capital of \$1,000,000. Its purpose is to engage in the building and repairing of large sea-going vessels for government and private use, as well as of river steamers of wood or steel, barges, lighters and tanks. The president is Robert G. Gorsuch, who is chief engineer of the Mexican International Railway Co. and representative in the Southern republic of the Pacific Mail Steamship Co. A. F. Nathan, the vice president, is also vice president of the United States & Mexican Trust Co. of Mexico City and general representative of the Stilwell railroad and mining interests in Mexico. Robert G. Hart, the chief engineer of the National Supply & Construction Co. of Mexico City, is consulting engineer of the Naval Construction Co. Arthur Gehm, the general manager, is United States consul at Tabasco. The chief naval constructor is John I. Copeland, who was formerly a United States naval constructor. C. A. Young, the secretary, is president of the Mexican Brokerage & Investment Co. of Mexico City. The site of operations will be at Frontera, which is the central point between Coatzacoalcas, Vera Cruz and Tampico on the one side, and Progreso, Campeche and Laguna on the other. At present there is but one dry dock for repairs between New Orleans and Panama—the government at Vera Cruz. The Vera Cruz dock is largely overcrowded at all seasons of the year, many vessels being required to wait for months for necessary repairs or to steam to New Orleans. The government work is entitled to especial precedence at the Vera Cruz yards and commercial and trading vessels are of necessity delayed in securing needed repairs. The company will shortly place some substantial contracts for equipment, etc., and is reported to have already in hand orders for twelve barges of various sizes, three steamers and two lighters.

SALE OF SHIPS TO BELLIGERENTS.

The United States government has had no official information of the sales, persistently reported from Europe, of American ships to either Russia or Japan. There already has been some speculation in official circles as to whether or not such sales could be permitted, as one thing is quite certain, namely, that no vessel under the American flag could be allowed to pass directly into the possession of the government of either belligerent state. This is said to be true of merchant ships as well as warships, for the former might easily be transformed into cruisers or used as troop transports, and the spirit of modern international law is said to be decidedly against the transfer of any floating property to a belligerent which could be used for warlike purposes. There is a line of difference between ships and war supplies. The latter may be regarded as merchandise. It happens that there are no warships in the United States which could be sold, all being United States government property, so that the question is reduced to that of merchant vessels. The principles laid down by the Geneva arbitration in the famous Alabama gates are of course the guiding marks for the United States government in treating this subject, and they have been generally accepted as international law by all maritime powers.

TWIN-SCREW STEAMSHIP DURHAM CASTLE.

The twin-screw steamer Durham Castle, built by the Fairfield Ship Building & Engineering Co. for the Union-Castle Mail Steamship Co. has run her official trials with most satisfactory results. Special interest attaches to this ship as the first of a new "intermediate" type, of dimensions which a few years ago would have been considered to fit only a mail steamer. She is 475 ft. in length, 56 ft. 6 in. in breadth, and 35 ft. deep. Her tonnage is 8,500 gross, and accommodation is provided for 230 first-class, 270 third-class, and 300 steerage passengers, and a crew numbering 200. The pass-

enger accommodation is of a very complete description, the first-class saloon seating 190 passengers, while the third-class dining room will seat the same number, with additional seats for seventy-two persons when required. Very full provision has been made for handling cargo, with seven derricks and eight winches, besides a winch for use with the fifteen lifeboats. The machinery consists of two sets of quadruple-expansion, four-cylinder engines, balanced on the Schlick & Tweedy system, and also includes the most modern appliances, such as feed filters and feed heaters, together with fresh water supply for drinking purposes. The four boilers working at a pressure of 220 lbs. per square inch are fired from twenty-one furnaces, and are contained in one watertight compartment. Over the measured mile at Skelmorlie the average speed of 15 knots was attained to the satisfaction of the owners' representatives. The Durham Castle was contracted for in January of last year. She has now sailed for Hamburg to load for South Africa.

NEW IMMIGRANT SERVICE FROM SCANDINAVIA.

By the establishment of a steamship service between Scandinavian ports and New York and Boston, the German lines seem intent on offering strong opposition to the trade in that class of emigrant now carried on by the Liverpool lines. As is well known, large numbers of Scandinavian and Finnish emigrants have for years past been passing through this port on their way to the States or Canada, and at certain periods of the year, they have been in the habit of paying a visit to their native country, and subsequently returning to America, thereby keeping up a remunerative shipping trade. How far the new German service will affect the business of the Liverpool lines remains to be seen, for while on the one hand, the liners sailing from this port are greatly favored by Scandinavians,—undoubtedly because of the increasingly comfortable quarters provided and the excellent treatment they receive—the Germans are, by means of greatly reduced rates going to try and capture all the trade they can. It is well to remember, however, that the charges for carrying emigrants from Scandinavia and Finland, are now practically at their lowest, if a remunerative business is to be done; and if the Germans, as appears to be their intention, are going to cut the rates, it will be impossible to make much, if anything, out of their new venture. Another point also arises, and that is in regard to the action which the British lines in the North Atlantic Conference are likely to take to meet this new opposition, for under the conference agreement the British lines had the exclusive benefit of the Scandinavian and Finnish business, whilst the German lines had similar advantages in regard to the trade of Mid-Europe. The opinion seems to be that this agreement will probably be put an end to at no distant date.

It is not in Great Britain alone that men regard with discomfort the great increase in naval votes. France especially is uneasy at the increasing cost of warships, and some of the facts before her are of considerable interest at present. There is natural difficulty in making comparisons between different types of ships; but the rate per ton displacement gives sufficient approximation to accuracy. The British Royal Sovereigns of 1891-2 cost £67 10s per ton; the King Edward VII of today cost £89 per ton. They are very different ships, but so are the vessels of all powers and the taxpayer has to pay for the same number of ships although they are much superior. In the French ships there is an increase from £93 4s per ton of the standard ship of 1891 to £112 19s per ton of the Patrie now being built. In Russia the advance has been £75 to £100 for the best of the vessels which have suffered at Port Arthur. The German navy are paying £90 per ton against £66 twelve years ago. The United States pay for the new ships now being laid down £97 per ton.



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ON THE FACE OF THE EARTH.

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Now is the time to build ships. A survey of the situation proves that no time could be more opportune than now for the placing of orders. For two years past steel plates have stood at \$1.60 and there is no prospect whatever of any lowering of this price. The recent reduction in the price of Bessemer ore agreed upon by the Bessemer Ore Association will have no perceptible influence upon the price of steel. It will probably not even affect the price of pig iron. The trade may be assured that plates will not be lower. The whole tendency of the iron industry, which is the king of all industries, is to hold business in its normal state. Moreover, labor is steady. Throughout the entire country wage schedules are being adjusted upon a basis that is practically equivalent to that which has obtained for the past two or three years. With this condition labor is, generally speaking, content. On the other hand the manufacturer is in a far better position today than he was a year or a year and a half ago, for the reason that he now has the pick of the labor market and is only paying to the most skilled men and best producers the wage rates which he formerly was obliged to pay to the poorest class of mechanics. Furthermore, the employe today is doing a better and more satisfactory day's work than he was a year or more ago, so that on the whole the manufacturer really has an advantage today, equal to at least 20 if not 25 per cent, due to these better conditions, all of which can be taken ad-

vantage of by the man who is farsighted enough to purchase a ship, or any class of machinery for that matter, under such favorable conditions. It is very doubtful whether these conditions will exist in a year or so from now, for as soon as the different ship yards become even partially filled up with work, prices will necessarily stiffen and advance. Ship owners need not delay orders for fear that they might be putting more capital into a ship than circumstances might warrant a year or two hence. The time to build is now, for both labor and material are as low as they are going to be.

One must also consider that the market for the American ship is widening. Already the coast laws have been extended to include the Philippine islands, which means that every pound of freight transported between the United States and the Philippines and between the Philippines and the United States must be carried in a vessel built in the United States. This trade is already considerable and it is growing by leaps and bounds. Two years hence, which is the time when the coast laws will embrace the Philippines, it will probably have trebled. The demand for supplies in a primeval country, such as is the Philippines, increases in a sort of geometrical progression with the advance of civilization. The Philippines are to be exploited. Railways are to be built there and enterprises of all sorts are to be established. Both production and consumption in the islands will vastly increase, which is equivalent to saying that both the imports and exports must inevitably grow.

All this means work for the American ship. There are probably American ships enough in existence to care for this over-sea interchange of products as it exists today, but there are not enough for the trade of two years hence. Consequently, ships must be built and now is the time to build them. Moreover, the trade to the United States ports via the Isthmus of Panama is coastwise trade. In addition, the movement to include the actual canal zone itself within the coasting laws has already crystallized in a bill, and there is assurance that it will be passed at the next session of congress. This means that the enormous consumption that the construction of this canal will entail must go forward to the zone in American ships. It is impossible to overestimate the importance of this commerce, for it will mean a constant stream of supplies for a period of eight years. The leverage that this will afford in the struggle of capital to gain South American markets, both on the eastern and western coasts, will be immense. To have a halfway stop an assured thing makes conquest of ports further on a reasonably sure thing. This is one great advantage that arises from the extension of the coastwise laws to the Philippines. It will make the trade to China, Japan and the orient more easy of acquisition; and the same must be true in regard to South American ports by reserving the Panama canal trade exclusively to American vessels.

Here, then, are certain markets for American ships.

These ships have got to be built. There is no way out of it. It is better to build them now than to wait, for at present both labor and capital are stable. A ship costs a certain sum today; it is likely to cost more a year or two hence.

Every shipyard throughout the country must feel the stimulating influence of the actions of the present congress. Ship building on the coast and on the lakes will be directly benefited. There is a considerable tonnage on the great lakes that can, with minor alterations, be adapted to the coastwise trade. It is probably true that the first source of supply for ships for the augmented service to Panama will be the present tonnage on the great lakes. There are lots of 3,000-ton ships on the great lakes, which is a fair average size for a vessel in the coasting service, that can be immediately transferred to the coast. Lake ship builders can alter them to conform to coast requirements in two or three months' time. Every ton withdrawn from the lakes would be replaced with larger and more modern carriers. The tendency on the great lakes is toward the larger vessel.

There is indeed a better day dawning for the American ship builder. There is a wider market opening for the American ship owner. He that anticipates the opening of the market is the one to reap the lion's share of the harvest. The important thing is to be ready when the doors to the Philippines and to Panama are open. From every point of view, now is the time to place orders for ships.

Moreover, there exists and will always exist, the necessity for the replacement of tonnage through the natural wastage of the elements. On the great lakes particularly is this wastage marked, because a fair proportion of the tonnage is wooden and it is constantly succumbing to the elements. Every wooden vessel that is destroyed must be replaced by a steel carrier. Again the growth of the passenger business on the great lakes is marked. This must continue to be an ever increasing factor as the great northwest becomes filled and as pleasure resorts are established in the ever cool regions of Lake Superior. Indeed the wonderful growth of population in the cities bordering on the great lakes is almost beyond ordinary comprehension. When one considers that in 1870 the total population in the cities bordering on the great lakes did not amount to much over 732,000, and in ten years it increased to over 1,210,000, and ten years later, in 1890, it was nearly double these figures, or to be accurate, 2,320,297, and in 1900 had increased to over 5,000,000. At the present time the cities bordering on the great lakes represent about one-fourteenth of the entire population of the whole United States. When the necessities of this vast number of people are taken into consideration and comparisons made as to the increased carrying tonnage during the same period of years it is a mere matter of arithmetic to determine what the vessel interests of the great lakes must provide for in the very near future. There is scarcely any department of industry

that is so promising as ship building and ship owning on the great lakes. Like every other great business it has its ups and downs, but in a natural order of things the scale must be an ascending one. A prediction was made lately by a man who was qualified to make predictions, that the United States Steel Corporation would in some one year within the next decade earn considerably over \$200,000,000. In order to do that it would mean that not less than 40,000,000 tons of ore would have to come out of the Lake Superior mines in a single year. This is merely mentioned as contributing evidence that the business of the great lakes must inevitably increase. The time to place orders for ships is now.

A bone of contention at present between the army and navy departments of the general government is the encroachment of the army into what the navy department regards as its special province, and that is the control of submarine boats. The submarine has by no means passed beyond an experimental stage, and the navy department has been quite chary about ordering them. Quite a powerful lobby has existed in Washington for some time past, urging congress to order the construction of a number of these vessels. Unity of indorsement from the navy department, however, has never been obtained for these crafts. Rear Admiral O'Neil was especially severe in his condemnation of them. The army has now entered the field and maintains that submarine boats are part of the coast defense. Of course, this is really quite plausible because they can be employed in establishing stationary mines which, of course, are under the jurisdiction of the army, and in guarding waters where stationary mines could not be maintained on account of the swiftness and depth of the water. A special body of army officers has recommended the purchase of five boats of the Lake design for the defense of certain harbors, but so far the report has not received the indorsement of the secretary of war.

The Gardner bill to appoint a commission to inquire into the state of the American merchant marine passed the house of representatives on Saturday last by a strict party vote. It is unfortunate that it should have been made a party measure because a question of pure patriotism ought not to belong to any party. This bill simply provides for the appointment of a commission to examine the present state of the merchant marine with especial reference to the foreign trade and to suggest whatever remedies could be applied to ameliorate the present condition. The commission is to hold its hearings during the summer and is to have its report ready for presentation to congress on Dec. 1 next. The bill is now before the senate where its fate is uncertain.

The extensive plant of the American Ship Windlass Co. at Providence, R. I., was destroyed by fire last week. Owing to the fact that the water supply of the town was temporarily out of order no means were available for checking the flames, which quickly spread throughout the entire plant. The industry is one of the largest and best in Providence and the loss to the town is very severe. As the workmen were practically never idle.

MARITIME ASSOCIATION OF PORT OF NEW YORK.

The thirty-first annual meeting of the Maritime Association of the Port of New York was held last week. The feature of the meeting was the report of Capt. A. P. Parsons, the president, which showed the condition of the association to be extremely favorable. He said:

"The new building to which we referred in our previous report as the most notable event in the history of the association was, as you are well aware, begun on May 4, 1903, by taking down all of the old structure, except the side walls, which was followed by the construction of the modern commodious building, the ground floor of which we now occupy. The work, which was to have been completed by Nov. 1, was greatly interfered with by strikes, both special and general, delaying the completion until Jan. 1, 1904, but through the courtesy of one of our members, Mr. Walter B. Pollock, of the New Central Railroad, the lessee of the room, we were permitted to remain undisturbed in our old quarters until this room was ready for the opening occasion, which was celebrated by a banquet, attended by nearly two hundred of our members and many prominent guests connected with matters of maritime interest. It is a source of gratification

to be able to state that the building was completed within the limits of the appropriation. The transfer of all the machinery of the Exchange, with all the records, materials and accumulations of a score of years, was no small matter, but so successfully was this accomplished that there was practically no interruption in the transaction of the regular business, closing in the Produce Exchange room on the evening of the 4th and opening here on the morning of the 5th, with but little inconvenience to those seeking information on the floor of the Exchange. That this could be thus accomplished was due, first, to the faithful efforts of the entire

office force, who performed heroic service, evincing a cheerful interest, which commanded our admiration and esteem; and secondly, to the spirit of patience and forbearance manifested by the members.

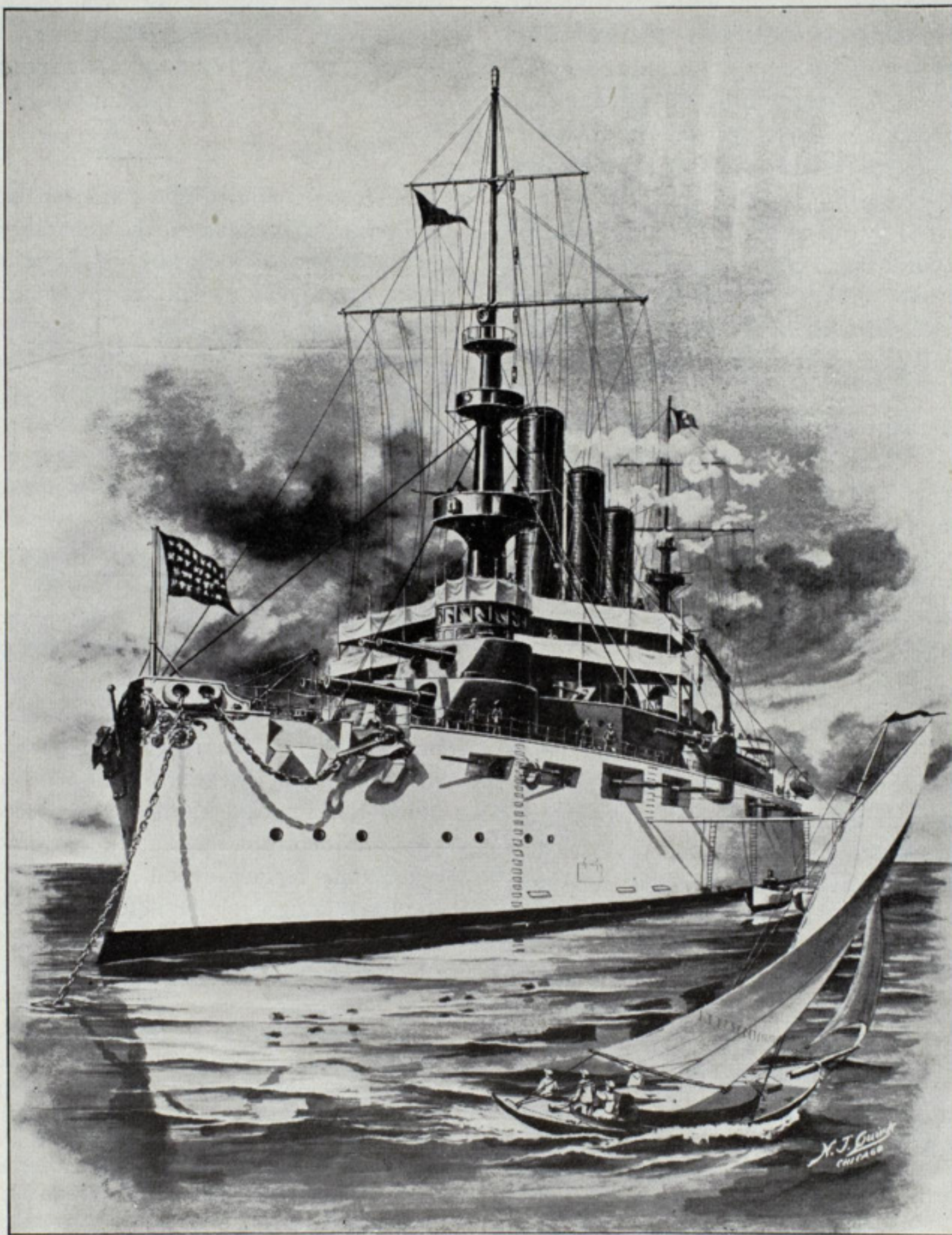
"The association began the year with 1,072 members. Eighty-nine certificates were transferred during the year and twenty-seven sold at auction at the end for arrears of dues. These were purchased by the association and cancelled, leaving the present number of members 1,045. There are very many business men engaged in matters maritime whose interests could be facilitated by membership in this association and

whose influence with us would advance the maritime welfare of the port. President Kelly in 1897 recommended the introduction of the manufacturer as the one lacking factor to complete the chain of business interests associated on the floor of this exchange. We recommend the adoption of some systematic method of enlisting the active interests of such men.

"Panama Canal.—The purchase of the Panama canal, made more than a year ago, has been ratified by a treaty between our country and Panama, and preliminary work has already begun. It is estimated that it will require eight years to put the canal in operation, which when accomplished will revolutionize the commerce

between the Atlantic and Pacific oceans, and while it will benefit all of our interests its advantages will accrue much more largely to those engaged in maritime affairs.

"Ferries.—Municipal control of the Staten Island ferry has been decided upon and that of the Thirty-ninth street ferry seriously considered by the city government. These facilities when inaugurated will greatly enlarge the water front privileges of the port of New York by adding the eastern end of Staten Island and the southern part of Brooklyn and Bay Ridge as available space for steamship and railroad



BATTLESHIP RHODE ISLAND AS SHE WILL LOOK WHEN COMPLETED.

[All ready for launching at the yard of the Fore River Ship & Engine Co., Quincy, Mass.]

terminals, by making more frequent and easy access possible between these points and the city.

"Derelict Steamer.—Two bills were introduced in the United States senate providing for the construction of a steamer to be used for removing and destroying derelicts. This action is due to the efforts put forth by the representatives of the different seaports through their committees on derelicts. Both bills have passed the senate, and it is expected that the one deemed the more desirable by the house of representatives will be passed at the present session.

"The Maritime Association through interest and sentiment has always felt keenly interested in the development of the new navy of the United States, and has recorded itself in favor of the rapid and efficient upbuilding of our navy. It was but natural, therefore, that upon the formation of the Navy League of the United States there should arise a general desire among our members to be enrolled in its membership.

"Steps to that end were promptly taken, and the Maritime Section of the Navy League of the United States was formed, which section now has a membership of 109. The Navy League is a non-political and non-partisan organization and corresponds to similar leagues in Great Britain, Germany and France, where the membership is large and influential. The Navy League of the United States has for its president Gen. Benjamin F. Tracy, formerly secretary of the navy, and for its vice president Hon. William McAdoo, formerly assistant secretary of the navy and now police commissioner of the city of New York. A public meeting was held succeeding the formation of the maritime exchange section, at which both General Tracy and Commissioner McAdoo explained the high aims and patriotic purposes of the league, which is growing in membership and promises to become a source of strength and influence in support of a powerful American navy.

"Museum.—A difficult problem was presented in moving into the new building as to the disposition of the curiosities which had been accumulated during the thirty years of our existence as an association. An unsuccessful effort was made to locate them in some of the city museums as a Maritime Exchange exhibit. The limited wall space in the new home would not permit of an entire display, and their value would be depreciated if placed in a separate room. They were moved entire into the new building and are being gradually located by Mr. Houghton, who is familiar with the history of nearly every article, including its origin, donor, when received, etc. Some of these are of great historical value and impossible of reproduction.

"Schoolship St. Marys.—This association has taken an active interest in this most excellent school for mariners. Our officers have visited the ship and some of them were, with members, present at the graduation of the class of 1903. We have recommended candidates for the course and have endeavored to assist the graduates in securing positions on both steam and sailing ships. The two years' course on this ship is not too long to properly qualify the student for the position of cadet or quarter-master, but those who take one year, including the cruise, are greatly benefited by the combination of theoretical and practical instruction received. The total number enrolled last year was 107, of which twenty-six were graduated. The present commandant, Com'dr G. S. Hanus (retired), has shown both energy and ability in his conduct of the affairs of the school and merits the hearty support of all who are interested in the development of the American seaman.

"The bill for the 1,000-ton barge canal was approved by the people at the fall election by a majority of 240,000. Our association, represented by Messrs. Lester W. Beasley, John V. Barnes and William E. Cleary, united with other state and city organizations in an active campaign for the accomplishment of this purpose. The state authorities are now actively

preparing for this enlargement, which will, it is believed, effect a reduction in the cost of the canal transportation from nearly two mills to substantially less than one mill per ton per mile between Buffalo and New York. The total capacity of the enlarged canals will be from 10 to 12,000,000 tons. The zenith of the canal transportation was reached in 1872 with a total tonnage of 6,673,370. In 1893 the traffic amounted to a fraction over one-half. The canals were originally completed in 1825 and an enlargement completed in 1862. This enlarged canal barge from a maximum of 240 to 1,000 tons will, it is believed, render discriminations now practiced against New York much more difficult. The full utility of these canals cannot, however, be realized until the state shall provide modern adequate terminals for the accommodation of canal traffic both at Buffalo and New York.

"Again the imports and exports of merchandise at the port of New York have exceeded those of any previous calendar year, 1903 showing a total valuation of \$1,114,331,346, constituting 44.93 per cent of the total foreign commerce of the United States. The value of imports was \$598,183,082 and of exports \$516,148,264. While this increase is gratifying, it is noticeable that the percentage of this port's total to that of the whole country steadily diminishes, a circumstance that emphasizes the necessity of eternal vigilance on the part of those interested in not only increasing New York's total foreign commerce but in at least maintaining its present percentage of the nation's total.

"Our trade with Cuba, with which we enjoy close commercial relations, continues to show a healthy increase. Of our imports of sugar from the island about three-fifths of the total received in the United States comes to New York, which last year amounted to over 600,000 tons, with a value of \$22,705,767.

"With the new reciprocity treaty now in force there is every reason to expect a rapid growth of our imports to and exports from Cuba. In fact, it is reasonable to suppose that we may before many years surpass the importations of sugar for the year 1894, when they reached their high-water mark of 2,127,497,454 pounds, valued at \$63,147,485.

"It is gratifying to notice that in consequence of the introduction of the United States sanitary methods the health of the cities of the island has been improved to such an extent that there was not a single case of yellow fever in Havana during the past year.

"The use of our modern methods in the culture of tobacco has greatly increased the quality and value of the product. This is also true in the case of the growth of the orange tree and other fruits.

"The experience of experts in these different lines as operated in the United States, with the capital necessary to use all modern appliances and methods, will tend to increase the exports of the island, which will accrue to the benefit of this port, which is the market for about one-half of Cuban exports."

Senate Bill No. 5306, relating to the inspection of steam vessels, will not be passed at the present session of congress. The bill was opposed by the vessel interests owing to the fact that it concentrated too much power, according to them, in the hands of one man. The bill virtually put full power in the hands of the Secretary of Commerce and Labor. The measure was generally favored by manufacturers because the present regulations are cumbersome and rigid and by reason of their rigidity various latter-day inventions cannot be adopted by steam ships. The purpose of the bill was to introduce a little elasticity into the regulations. It will undoubtedly be passed with certain amendments at the next session as a real need exists for a more comprehensive statute.

The life saving stations on Lake Ontario were officially opened on Monday last.

THE MAN AT THE WHEEL.

The president has signed the bill extending the coast laws to the Philippine islands to go into effect July 1, 1906, and while it is greatly to be regretted that it should have been necessary to extend the date so far ahead in order to placate the representatives of the foreign shipping interests, yet, considering the forces that were combined to prevent the passage of this patriotic measure, every loyal American can rejoice that it is to become operative so soon.

The most discouraging feature of our entire merchant legislation, however, is that it would seem to have become largely a partisan matter in which, through a very unfortunate combination of circumstances, the minority party in congress would seem to have gotten hold of the short end of the stick. This is not a new experience with minorities and especially is it not a new experience for this particular "minority," who have shown their really wonderful facility in this direction frequently and especially when patriotic questions were at issue.

It is here that John Bull has the best of us and the extent to which all hands over there are compelled to toe the mark when any question concerning the flag is being considered, because of the disposition of the Briton to place loyalty ahead of parties, an advantage and the peculiarity of their form of government which is sensitively responsive to the popular desire.

The American public are not given enough credit for common sense at times by some of our Washington misfits and if it was left to popular vote, no one will deny that the extension of the coast laws to the Philippines would have been carried by about a hundred to one, instead of the narrow majority that one party has in our national congress.

But it will be the same probably next winter when the question of extending the coast laws to Panama comes to the front.

Speaking of Panama the Marine Review feels quite happy over the thought that it was this publication that first advocated this measure and we only wish it were not a breach of confidence to reproduce here some of the letters that have been received from such well known senators as Dubois, Dick, Beveridge, McCleary, Hawley, Spooner, Dryden, Fairbanks, Foster, Warren, Heyburn, Burnham, Smoot, Kearns, Perkins, Burrows, Frye, Hale, etc. All congratulating us upon our enterprise and foresight in this particular matter. None the less complimentary were the letters from many congressmen, such as Foss, Ruppert, S. E. Payne, Cooper, S. W. Smith, Douglass, Southard, Watson, Otis, Greene, Tawney, Morrell, Beidler, Loadslager, Griggs, Underwood, Adams, Grosvenor, Gardner, Curtis, Hepburn, etc., all indicating a deep interest; many of them declaring quite definitely that they would not only support but work for the passage of such a measure at the proper time.

It is a serious question if the minority party have not got the best end of the argument in several of the issues before this congress; but on each of the questions affecting our merchant marine they were hopelessly wrong.

The extension of the coast laws to the Philippines, the law appointing a commission of senators and representatives to make a thorough examination into every phase of this shipping question and report as they think best, and the law providing for transport of all government stores in American ships as far as possible, ought each to have received the unanimous and enthusiastic support of every member of both houses and those who opposed these measures are going to hear a great deal more about their actions, yet, than they imagine.

There was not a so-called "subsidy" bill under consideration or even suggested. Opinions may differ, perhaps, and with some show of reason on the question of "subsidies" but such simple, plain propositions as those referred to, costing the country practically nothing, should stir every pulse, every

nerve, every drop of blood in every American citizen to the limit in an anxious effort to see them a part of our national policy at the earliest possible moment.

We hear very little each year when it comes to the voting of the millions and millions that are so lavishly handed out to a few great railroad systems as what are known as "postal subsidies." There is no hysteria or fearful anxiety shown, but rather a desire to get the deed done as quickly as possible.

There must be a reason for all this. What can it be?

We are reminded of a little story which may throw some light on what has so long remained a problem.

The writer was one of a little party recently traveling west from Washington, in the party being a well known congressman of the "minority" kind. This gentleman was hurrying home to participate in some caucus or convention or something of that sort that materially affected his interests.

He complained several times that he had been seriously inconvenienced by pressing business in Washington which had detained him much to his own disadvantage and later on explained that the "important" matter had been a long deferred vote on a large railroad subsidy to a southern road for carrying Uncle Sam's mails to New Orleans.

On the subject of the payment of this very generous subsidy he waxed eloquent and enthusiastic and could give more kinds of reasons why the poor railroad was especially deserving than anyone not accustomed to the originality and versatility of the average congressman could ever imagine existed.

But when it came to a discussion of even passing a coast law that would cost the government nothing, our congressional friend grew really eloquent and could repeat backwards all the standard arguments that have been worn threadbare and made to do duty over and over again.

It was simply amazing to see how quickly he could change front and sidestep when the arguments he produced in defense of his position in the one case were applied to his position in the other.

It was truly marvelous and perhaps just a little amazing, but the reason was somewhat apparent later on. The Pullman conductor presently asked for his ticket and he had it very handy in the shape of one of those little square pieces of lithographed pasteboard that the Pullman Co. gives to their chosen friends occasionally, mostly always for services rendered and value received.

Then when the train conductor came around and wanted more tickets our friend who favored the railroad subsidies and opposed maritime legislation of every kind had another little card to which the railroad official made his obeisance and passed on.

And this congressman is very highly thought of and well spoken of by many of his constituents.

The moral or the morals of this little story are quite plain:

Moral No. 1—If you wish to know why our congressmen are so generous with their votes to the railroad companies (and which we are not criticising) watch them when they travel.

Moral No. 2—If the steamboat companies want more favors they should issue more passes to—No matter where. Any old plan will do—the River Styx preferred.

The yacht Ingomar, designed by Capt. Nat Hereschoff and owned by Commodore Morton F. Plant of the Larchmont yacht club, has sailed for Southampton, where she will be put in shape for a trial of speed in various regattas against the fastest British and German yachts.

The Hamburg-American Line deny that there is any truth whatever in the report that the Deutschland is to be sold to the Russian government.

MASTERS AND OWNERS OF LAKE VESSELS.

From all indications no real difficulty is going to be experienced in arriving at settlements with labor on the great lakes with the exception of the Masters' and Pilots' Association. The one association with which it would seem that there should be no difficulty at all is the one that is going to create the greatest trouble. The masters have not so far withdrawn the clause in their schedule which says that a master may not be removed until after an arbitration committee has passed upon his case. The owners feel that they cannot consent to that clause because it virtually takes the management of the vessel property out of their hands. Apparently, however, the masters intend to abide by it and therein lies the stumbling block. The attitude assumed by the masters in this particular is untenable because they desire to exercise over the crew the very privilege which they deny to the owners themselves. However, it is clear that the masters intend to make an issue of it because a couple of small vessels have already been tied up owing to the refusal of the masters to take them out until an agreement had been reached by their association with the Lake Carriers. That this condition should have come about is most singular and paradoxical as well, because it has been projected against the real sentiment of a great majority of masters. In private conversation individually several of them have strongly expressed their disapproval of it. Nevertheless they are bound by the action of their association and apparently intend to enforce it, if possible. Since the conference broke up about a week or two ago, the owners have made no overtures to the masters and intend making none. Two reasons actuate them to this end: The primary one being their belief that the position assumed by the Masters' and Pilots' Association is an outrageous one and the secondary one being due to the fact that trade conditions do not warrant an early opening of navigation. In fact, a number of owners would rather welcome a tie-up until June.

With the other departments of labor aboard ship the executive committee of the Lake Carriers' Association is making satisfactory progress. During the present week the committee has been in session with a delegation representing the Marine Firemen, Oilers' & Watertenders' Association and have practically reached agreement with them upon all points excepting wages. The union desires the same wage schedule that was paid last year \$47.50 until September 1 and \$65 thereafter, while the committee would prefer a uniform scale for the entire season. No trouble, however, in reaching the decision satisfactory to both sides is anticipated. As soon as the agreement is entered into with the firemen and oilers, the executive committee will meet with the Lake Seamen's Union and Marine Cooks' & Stewards' Union, probably during the latter part of the present week.

UNLOADING CHARGES FIXED.

Unloading charges of Lake Erie ports have been fixed at 19 cents for the coming season. This price was determined upon at a meeting of the dock managers, held in Cleveland last Saturday, and is 2 cents per ton lower than the rate which prevailed last year. The wages of the men that are employed on the docks were reduced $7\frac{1}{2}$ per cent, which work out at about 1 cent per ton, so that the reduction to vessel owners is a horizontal one, being shared alike by the dock managers and the ore handlers.

The business of the coming season has been rounded up very leisurely. There is absolutely no talk concerning carrying charges and there probably will be none until sales of ore are made. While no sales are as yet reported, they are likely to occur at any time, as the price of ore has been definitely fixed for the coming season.

It is likely that there will be no movement of vessels to speak of during May. Ore is going forward freely and the

docks will probably be in fair shape by the time the first cargoes of ore actually arrive.

AMERICAN REGISTER FOR THE BEAUMONT.

Mr. F. W. Gilchrist of Alpena has finally succeeded in obtaining American register for the steamer Beaumont, formerly the Myra. This vessel was wrecked off the coast of Nova Scotia two years ago and was abandoned by the underwriters' wreckers. Mr. James Reid of Sarnia, Ont., concluded that he could float her and after digging a canal to her he succeeded in getting her into deep water. She was temporarily patched up and taken to Cramp's, where she was entirely repaired. Vigorous opposition was made to the admission of the Beaumont by Atlantic coastwise traders, and the fight was even led against the vessel by Senator Frye. However, Mr. Gilchrist succeeded in convincing the senate that he was not endeavoring to evade American law and that he had salvaged the vessel in order to take advantage of the law which provides that a foreign vessel may be admitted to American register where repairs upon her, made in an American yard, equal three-fourths of her cost. Mr. Gilchrist had easily spent this sum for salvage and repairs and the senate so held.

NAVAL APPROPRIATION BILL.

A full agreement was reached this week on the naval appropriation bill by the conference committees of senate and house. The house provision for the consolidation of the power plants under the bureau of yards and docks was restored, and the senate provision permitting such consolidation under the various bureaus was eliminated. The senate provision for a naval training station on the great lakes was at first stricken out, but this appears to have been unintentional, because when discovered it was put back in again at a special meeting of the conferees. The sum of \$250,000 is appropriated to purchase a site and \$5,000 is appropriated for the expense of a commission, whose duties it will be to select and recommend a suitable site.

Senator Hale in submitting the report of the conferees took occasion to make some rather sensational remarks regarding the usefulness of the modern battleship, drawing sweeping inferences from the Russian-Japanese war and expressing regret that it was not in the power of the conferees to eliminate the provision to the construction of a battleship. Naval authorities at Washington, however, take issue with Mr. Hale's conclusions which they regard as hardly warranted by events in the far east. They maintain that so long as other nations build battleships this country must do likewise. Obviously one nation could not afford to abandon the battleship type unless it was simultaneously abandoned by all.

AMERICAN SHIPS FOR AMERICAN WORK.

Editor MARINE REVIEW:

I desire to thank you for your advocacy of regulations to secure employment for American vessels, and especially to approve the reasons for the same, to-wit, that our ships are entitled to preference for our own work. This preference is but justice. To deny it were injustice. The compact of union rests upon an agreement that "navigation laws" should always secure the rights of our shipping, and protect its employment in foreign trade as in domestic. This beggarly business of blowing for subsidy, instead of giving us regulations of commerce, should deceive nobody. It has been going on for thirty-four years, and it never procured one dollar's worth of work for our shipping and never will. It is a very cheap kind of claptrap that our politicians should be unwilling to indulge in much longer.

Denver, April 17.

WM. W. BATES.

The life-saving stations on Lake Ontario were officially opened on Monday last.

CUNARD LINE AND THE IMMIGRATION BILL.

Senator Dillingham has received from Mr. Vernon H. Brown, agent of the Cunard Line at New York, a letter in which he explains briefly the Cunard Line's contract with the Hungarian government for the transportation of immigrants from Fiume to the United States. The purpose of the letter is a protest against the enactment of the immigration bill which would exclude immigrants "whose immigration is encouraged or induced by the agreement of any government, directly or indirectly, with any transportation company." This bill was introduced in the senate on April 13 by Senator Dillingham.

Mr. Brown in his letter to Senator Dillingham says that he would gladly show any member of the senate committee the agreement of the Cunard Line with the Hungarian government, but that for obvious reasons the agreement could not be made public. He also submitted a letter from Baron von Hengelmüller, the Austrian-Hungarian ambassador, to the effect that the Hungarian gov-

ernment greatly deplores the disposition of the Hungarian people to immigrate and would gladly prevent the immigration were it lawful to do so. However, as immigration from a country cannot be controlled, the government is merely desirous of protecting the immigrant and building up its own trade at the port of Fiume. The agreement of the Cunard Line with the Hungarian government probably comes under the letter of the immigration bill as introduced by Senator Dillingham, but it is doubtful if it violates its spirit. Mr. Brown in his letter says:

"The question presented to your committee by this agreement is not whether the Cunard company is receiving aid or encouragement from the Hungarian government, for practically all transatlantic lines receive aid and encouragement from some government, and if this disqualifies them from carrying emigrants, then practically all emigration to the United States must cease. Nor is the question whether the existence of this agreement shall cause an emigrant to come on a Cunard ship who would otherwise have come by another line, for if he is fit to come according to the standard fixed by our laws, it can make no difference what line brings him here, so far as the interests of the United States are concerned; and if governmental influences in favor of a steamship line disqualifies that line to carry emigrants, then most of the transatlantic lines must also be so disqualified.

"The question which this agreement presents to your committee is whether the agreement will operate to induce an emigrant to come to the United States who otherwise would not come. Baron von Hengelmüller's statement is that the sale of emigrant tickets in Hungary has heretofore been in the hands of the competing agents of various lines, some of whom have been guilty of what he calls 'an illicit emigration propaganda,' and who cannot be controlled by the government.

"Under this agreement the competing activity of these agents must cease, and the emigrant must obtain his ticket and passport from the government which wishes him to remain, and

which, as the Hungarian premier, Count Tisza, declares, would rather pay his fare and keep him than have him emigrate. In an under-populated country like Hungary, where, as I understand, agricultural labor is in demand, the policy of the government must be to prevent its people from leaving and therefore to whatever extent the government controls the machinery of emigration the working of that machinery will reflect the government's policy of retaining its people whenever it can; this policy is shown in the terms of this agreement, in which the Hungarian government stipulates that the Fiume line shall receive the fares of 30,000 passengers each year,

whether that number of passengers go or not.

"An emigration of 30,000 a year would be only between 10 and 15 per cent of the present emigration from Austro-Hungary to the United States. If, therefore, this guarantee becomes of the least importance it will be because the government supervision of emigration has operated to cut it down from 85 to 90 per cent. Baron von Hengelmüller

states that the Hungarian government would gladly pay the fares of those who do not go for the sake of keeping even the 30,000 at home. Instead, therefore, of increasing emigration, this agreement must from the nature of the situation operate to reduce it, and there is no reason to believe that emigrants by the Fiume line coming at the rate of 2,500 a month will not be as carefully examined as to fitness as those who come from Austro-Hungary last year by the continental lines at the rate of over 22,000 a month.

"Therefore, to exclude an emigrant merely because he has come by this Fiume line, which has been established under agreement with the Hungarian government, means that the emigrant so excluded could, after deportation, immediately return to this country by another line, and would then be admitted. Such a discrimination would not be in accord with any known policy for limiting emigration and cannot have been intended by your committee. In reply to this it may be said that if the Hungarian government does not assist emigration under this agreement, then passengers by the Fiume line will not be debarred under the amendment excluding those whose emigration is encouraged or induced by the agreement of any government, directly or indirectly, with any transportation company. I would assent to this view were it not that, as a practical matter, there is no certainty what construction will be put upon a new provision of law containing general and sweeping terms; and, further, were it not that no construction of the law could be fixed without a delay which would in itself involve a calamity.

"If the bill is adopted as it stands, the clause above quoted will not come up for construction until a steamer arrives from Fiume. Such a steamer would probably bring from a few hundred to over a thousand emigrants, and the immigration officers of the port of New York would be called upon to decide the question of law and fact involved in determining the meaning of this clause as applied to the agreement with the Hungarian government. I assume, of course, that these



SALMON FISHING ON THE COLUMBIA RIVER.

officers would consider the question carefully; but, considering the popular clamor for a strict enforcement of the immigration laws, the officers of an administrative department of the government might well hesitate to pass finally on the question and might in their own protection refuse admission to the emigrants till the courts had construed the new law, which would require from a few months to a year, and during that time a new ship would be arriving every two weeks and a body of some thousands of emigrants would either be held practically as prisoners pending the court's decision or sent back to Europe with their savings spent and their plans and hopes gone. I need not comment on the loss, and particularly on the suffering which this would cause. If your committee recommends any further test of personal fitness in the individual emigrant, no transportation company ought to be heard in opposition to such an amendment. The Cunard company certainly have no opposition to offer. I submit that the agreement between the Hungarian government and the Cunard company does not affect the personal fitness of the emigrants and cannot tend to increase or assist immigration, and I urge upon your consideration the difficulties which may arise and the suffering which may be caused if a large body of immigrants are either detained or deported pending a judicial construction of this amendment. If actual experience indicates any necessity for such an amendment to the law, I submit that it will be time enough to make such a change at the next session of congress, after such necessity has been shown."

PANAMA CANAL COMMISSION RETURNING.

Mr. Wm. Barclay Parsons of the Panama Canal Commission has returned to New York from Colon for the inspection of the work already done on the Isthmus and preliminary work that is to be done there, and after the members of the commission were presented to the president of the new republic,



AMERICAN LINER NEW YORK'S BROKEN NOSE AFTER THE COLLISION WITH THE BRITISH TROOPSHIP ASSAYE IN THE ENGLISH CHANNEL.



THE UGLY GASH THAT THE NEW YORK MADE IN THE ASSAYE'S BOW.

they began their work traveling in boats through such portions of the canal as were navigable.

"The commission," said Mr. Parsons, "examined at great length the celebrated Emperador and Culebra cuts, which form the most serious obstacle to construction, traversed the Charges river for some miles above the line of the canal so as to study the details of construction necessary to control this stream, which at times of flood carries an enormous amount of water. The commission also examined the various sites selected for locks, the site of a dam which has been proposed to be constructed at a place called Bohio, which would convert the central portion of the canal route into a large artificial lake, and also examined sites for other dams as alternate schemes to the Bohio dam. In all these examinations the engineers of the French company rendered valuable assistance, with the information, maps, and plans that they had prepared. The net result of these investigations is that, in my judgment, the construction of the canal is perfectly feasible, and when constructed the canal can be successfully operated. I had never been on the isthmus before, but from all accounts had expected that the climate would be exceedingly disagreeable, and with health conditions that could be improved only at great expense. In both these respects I was agreeably disappointed. I am confident that with a supply of good water furnished both to Colon and Panama, and with a complete system of sewers, supported by proper sanitary regulations vigorously enforced, both of these cities can be made healthful places of residence. Steps were taken before I left Panama to begin investigations for the selection of a proper supply of water for both Colon and Panama. I left the commission in good health. In a few weeks the commission will return to Washington and organize the necessary engineer corps."

Bids were opened last week by Capt. C. F. Shoemaker, chief of the revenue cutter service at Washington, for the new revenue cutter for the Maine coast. There were two bidders, the Portland Ship Building Co. of Portland, Me., for \$270,000, and the Pusey & Jones Co. of Wilmington, Del., for \$290,370. The appropriation made by congress for this vessel was \$200,000, so the lowest bid exceeds the appropriation by \$70,000. Whether contract will be awarded and congress asked for an additional appropriation or whether the bids will be rejected is yet to be determined. This vessel was completely described in the March 10 issue of the Marine Review.

Great Britain is undergoing a ship building boom at the present time, 200 new steamers having been contracted for in January and February, with a deadweight carrying capacity of not far from a million tons. As the freight market is by no means strong, British ship owners are looking forward to this additional tonnage with considerable misgiving.

AROUND THE GREAT LAKES.

Dredgers have begun the work of removing a sand bar at the entrance of South Haven harbor.

The naval reserve ship Yantic is at the yard of the Great Lakes Engineering Works at Detroit for a general overhauling.

A new chart in colors of the Manistique harbor has just been issued by the United States survey office, and is for sale by the Marine Review.

The lighthouse tender Crocus, which is being built at Baltimore, will be brought to Lake Erie some time during the present summer. The Crocus will replace the Haze.

A special dispatch from Washington announces that the house has passed a bill authorizing the establishment of a life saving station at or near Keweenaw point, Lake Superior.

Bids for the construction of the new Middle Island station have been opened at the office of Maj. Lanson H. Beach at Detroit. The lowest bidder was Gearing Bros. of Detroit for \$19,750.

The Steamer Emory Owen, which was burned in Lake Michigan last fall, has been accepted by the underwriters as a constructive total loss. She was raised and towed to Milwaukee.

It is reported that the Grand Trunk elevator of Midland, Ont., was struck by lightning and totally destroyed by fire last week. This elevator was leased by R. R. Bacon & Co. of Chicago.

James Davidson's ship yard at West Bay City, Mich., has resumed operations. A force of men are now working on the propeller Phestigo. The entire plant will be started within a few days.

The new collier Marquette and Bessemer No. 1 arrived at Conneaut on Tuesday. It took her twelve hours to plow her way through the ice. She was, however, delayed in part by darkness.

The Great Northern railway will have at least four new iron mines on the Mesabi range, which will enter the shipping class this year. They are the Susquehanna, Frantz, Yates and Forest.

Work has been begun by the Illinois Central railroad of the removal of a bridge at the mouth of the Chicago river. According to government orders the bridge must be out of the way by July 1.

The Empire Ship Building Co. of Buffalo has awarded a contract to the General Electric Co. of Buffalo for the installation of electric power to be used in pumping out its floating dry dock in the Erie basin.

James Scanes, a veteran Toledo ship builder, whose property was swept away by the January flood, expects to be open for business within two weeks. The flood did serious damage to several yachts that were moored at Scanes.

The propeller Sahara, building for Geo. A. Tomlinson of Duluth, will be launched at the Lorain yard of the American Ship Building Co., on May 5. Next to the Augustus B. Wolvin the Sahara will be the largest carrier on the lakes.

The Donnelly Contracting Co. will undertake to raise the car ferry Shenango No. 1, which was burned and went to the bottom off Conneaut harbor. An effort will be made to save the vessel's machinery and the cars that were aboard her.

Last week work was resumed by the Lake Erie Dredging Co.'s fleet on the government contract work of deepening the Niagara river and Tonawanda harbor. The work was begun two years ago and it is expected will be finished this year.

Lizzie Broughton, Eaton Rapids, Mich., asks for information concerning the death and position held by James Wilkes, who is supposed to have been drowned about the year 1885-1886. He sailed as captain or mate from some Lake Superior port.

The National Steamship Co., with a capital stock of \$150,000, has filed articles of incorporation at Sheboygan, Wis. The incorporators are: P. Reiss, Peter Reiss and Gustav Heutte.

The company will conduct a general lake and ocean transportation business.

Bids have been opened by Maj. Dan C. Kingman, government engineer at Cleveland, for removing 30,000 yards of earth from the east side of the Cuyahoga river. The firm of L. P. & J. A. Smith of Cleveland was the lowest bidder of \$18.50 a yard.

The Reid Wrecking Co. of Sarnia has begun the work of removing the burned hulk of the propeller Minnesota in the St. Clair river. The wreck will be marked at night by two white lights, and if work should be suspended at any time during the day two white buoys will mark it.

The Lake Erie Transportation Co., the steamship line controlled by the Wabash railroad, will operate only two boats of its fleet this season, the George S. Gould and the C. S. Reynolds. George Butler will be chief engineer of the Gould and James Butler will be chief engineer of the Reynolds.

The Clyde Steel Works of Toronto, Ont., of which Mr. Edward Ramage is manager, has been giving extensive alterations and repairs in the dry dock at Kingston to the steamer Chicora, belonging to the fleet of the Niagara Navigation Co. Mr. Ramage did the work so well that Lloyd's rating of the steamer has been raised from A-2½ to A-1½.

Chief Engineer Rogers of the Lehigh Valley Transportation Co. has announced the appointment of the following engineers for the Lehigh Valley fleet: Mauch Chunk, B. H. Fox; Wilkesbarre, H. Mellon; E. P. Wilbur, Henry King; Saranac, Harvey Wilson; Tuscarora, John Leahy; Seneca, John Hall-din. They were ordered to report for work this week.

The Pittsburg Coal Co., has prepared an interesting exhibit for the St. Louis exposition, which will illustrate the various stages from the mining of the coal to its delivery to the Lake Superior country. The exhibit includes a miniature working model of the big propeller Geo. A. Flagg and a model of the car dumps used by the company to unload the coal. The model of the Flagg is 7 ft. long, 20 in. wide and 14 in. high.

The marine interests of Chicago are about to realize the efforts of a long fight for turning basins in the Chicago river. The condemnation proceedings in the United States district court have been completed and the government is in practical control of the property wherein to locate the basins. It is expected that Col. O. H. Ernst, government engineer, will shortly advertise for bids for the work. Two basins will be built, one at the north branch of the river at Goose island, covering an area of 10.7 acres, and the other at the forks of the south branch of the Chicago river, covering an area of 9.5 acres.

The new valve engines in the Poe lock at Sault Ste. Marie canal will be tested as soon as the weather opens up. If they work satisfactorily the locks will be ready for business as soon as the test is made. While the work in the old lock is moving along quite rapidly the men have been handicapped by the ice, which is found in almost every nook and corner in the bottom. Steam is now being used to thaw it out. As a result of the work now under way vessels passing through this lock in future seasons will be less liable to touch bottom as in the highest places the timbers have been cut away to a depth of 2 or 3 in. While this is not much of an increase in depth it will have a tendency to lessen the danger of scraping.

Mr. F. B. Smith, chief engineer of the Pittsburg Steamship Co., has appointed the following engineers of the company's fleet: Bessemer, A. C. Haig; Black, J. Hegemier; Bunson, J. F. Wood; Cornell, A. L. Eggert; Crescent City, F. Marshall; Eads, W. J. Harzant; Edenborn, E. S. Stoddard; Ellwood, G. C. Lawrence; Empire City, F. Mansfield; Ericsson, A. P. Williams; Fairbairn, D. H. Black; Fulton, George Arnold; Gates, J. W. Greiner; Harvard, C. H. Burke; Hill, F. Schwartz; Houghton, J. W. McEachren; Lafayette, L. Walder; Linn, H. Dupont; Maritana, C. A. Fletcher; Mariposa, E. H. Learend; Maricopa, F. A. Smith; Mataafa, William Mast; Maunaloa, F. Harringer; Malletoa, T. Treleaven; McDougall, Fred

Warning; Morse, E. W. Fox; Murphy, Henry Annett; Poe, V. L. Campbell; Princeton, M. Toner; Queen City, F. G. Carey; Rensselaer, J. Dupont; Rockefeller, Thomas Kelley; Shaw, E. J. Fitzgerald; Siemens, D. McVicar; Stephenson, S. W. Armstrong; Superior City, William Densmore; Van Hise, John McLaughlin; Watt, A. W. Armson; Zenith City, A. Jackson.

SHIP YARD NOTES.

The Williamette Boiler Works, Portland, Ore., is installing machinery in the new tug Daring, owned by the Grays Harbor Tug Boat Co.

The armored cruiser California will be launched today (Thursday) from the yard of the Union Iron Works, San Francisco, Cal.

The five-masted schooner Margaret Haskell which is being built at Camden, Me., for the Coastwise Transportation Co., will be launched in July.

M. Moran of New York has contracted with the Neafie & Levy Ship & Engine Co., Philadelphia, for a sea-going steel tug for use in New York harbor.

It is reported that the Bay & River Dredging Co., Stockton, Cal. is preparing to establish a ship yard at Twelve Mile Slough, which will be used exclusively for the construction of dredges.

Percy & Small, Bath, Me., have received an order from J. S. Winslow & Co. of Portland, Me., for a six-masted schooner to be 280 ft. long, 48 ft. beam and 28 ft. deep, to register about 3,000 tons gross.

The launch of the five-masted schooner Singleton Palmer took place in a thick snow storm at Walderboro, Me. She was built for W. P. Palmer of Boston. Her dimensions are: Keel 273 ft., beam 45 ft. 6 in., hold 27 ft. 6 in.

Bids have been solicited by the San Francisco, Oakland & San Jose Railway Co. for the construction of a third ferry boat for use on its Key Route line. Plans have been prepared by Henry J. Gielow of New York.

The Parker Line of New Orleans is negotiating with Howard's shipyard, Jeffersonville, Ind., for the construction of a river steamer for the New Orleans and Monroe trade. The plans call for vessels 165 ft. long, 30 ft. beam and 6 ft. deep.

A new steamer building at Roach's ship yard, Chester, Pa., for the Ocean Steamship Co. of Savannah, Ga., will be launched in about two months. She is a sister ship to the City of Columbus, which is nearing completion at Roach's yard.

William E. Woodall & Co., Baltimore, have received a contract to build a new wooden tug 115 ft. long, 21 ft. beam and 11½ ft. deep. She will have machinery from the James Clark Co., the engines being fore and aft compound by 15, 30 and 22 in. stroke.

Gardiner G. Deering will start in a few weeks on a five-master, a duplicate of the Gardiner G. D. Deering. She will be a craft of 2,000 tons. Mr. Deering has also ordered the material for a four-master of 1,200 tons.

The Maryland Steel Co., Sparrow's Point, Md., lately launched the twin-screw tug Greenville. The tug is 120 ft. long, 24 ft. beam and 13 ft. deep. Her engines are triple-expansion with cylinders 14½, 23½ and 39 in. diameters by common stroke of 28 in. Steam is supplied by a Scotch boiler 14 ft. long and 13 ft. diameter.

The tug Imperial, built by Thomas McCosker & Co., Baltimore, Md., for the James Clark Co., is receiving the finishing touches to her joiner work at the Nillson Yacht Building Co.'s yard at Baltimore. The Imperial is 115 ft. long, 21 ft. beam and 11½ ft. deep. Her engines are of the fore and aft compound type with cylinders 15 and 30 in. diameters by 22 in. stroke.

The Merrill-Stevens Engineering Co., Jacksonville, Fla., has prepared plans for a floating dry dock which will be used in connection with the ship building plant. The form of con-

struction will be on a somewhat different plan from that generally adopted for this type of dock. The dock has been designed by Mr. A. E. Stevens, the president of the company. The box will be 260 ft. long by 80 ft. wide without riggers on either end of 35 ft. It is designed to accommodate vessels of 20 ft. draught and of 4,200 tons carrying capacity. There will be four watertight compartments amidships and four each fore and aft, making sixteen in all.

PERSONAL.

Capt. L. S. Sullivan has been made manager of the Great Lakes Towing Co. at Toledo.

W. H. Fletcher has been appointed passenger agent of the Northern Michigan Transit Co. with headquarters at Chicago.

M. G. Palmer of the Quintard Iron Works and W. J. Burlee of the Burlee Dry Dock Co., have been elected members to the board of trustees of the Webb Academy and Home.

Peter Cooper Hewitt has been unable to accept the chairmanship of the motor boat committee of the Automobile Club of America. Mr. J. Herbert Carpenter has been appointed chairman of the committee.

Mr. W. B. Chisholm has been appointed superintendent of the Minnesota & West Shore dock at Buffalo. He succeeds Frank Armstrong who has resigned to accept another position with Pickands, Mather & Co.

Mr. Robert S. Hart, for many years representative of the Northern Steamship Co. of Detroit, has been appointed agent for the Mutual Transit Co. of Buffalo with headquarters at Cleveland. The appointment takes effect May 1.

Mr. Stevenson Taylor of New York has been appointed by the receiver as an expert to examine into the present condition of the constituent plants of the United States Ship Building Co. Mr. Taylor will leave for San Francisco in a few days.

Mr. W. C. McMillan of Detroit has sent a check for \$100 to the University of Michigan to be used in keeping up the McMillan Shakespeare library, presented to the university by the late Senator James McMillan and kept up by him until his recent death.

The Hon. Peter White of Marquette, Mich., has returned home from a six weeks' trip to Washington and other points. Mr. White says he believes the money will be forthcoming for the semi-centennial celebration to be held at Sault Ste. Marie next year to commemorate the fiftieth anniversary of the completion of the first canal.

The annual meeting of the stockholders of the Joseph Dixon Crucible Co. was held at the company's main office, Jersey City, N. J., Monday, April 18, and out of a possible vote of 7,345 shares, there were 7,126 shares voted for the re-election of the old board, consisting of Edward F. C. Young, John A. Walker, William Murray, George T. Smith, Edward L. Young, George E. Long and Joseph D. Bedle. President E. F. C. Young, Vice President and Treasurer John A. Walker, Secretary Geo. E. Long, were re-elected by the directors. Judge Joseph D. Bedle was also re-elected as counsel.

Interests connected with the United States Ship Building Co. reorganization said this week that the foreclosure sale of the plants under the two mortgages would take place by June 1 and if everything works out as expected at present, the new company would be in shape to do business before the close of summer.

Vessels classed and rated by the American Bureau of Shipping in the Record of American and Foreign Shipping are: American screw Evelyn, American schooner Singleton Palmer, American bark Alden Besse, American barge Oley, American half brig Alcaea, and British three-masted schooner Elma.

CANADIAN FAST LINE.

In view of the rivalry between Montreal and the Atlantic seaports of the United States—Portland, Boston, New York, Philadelphia, and Baltimore—the efforts of Canada to establish a fast Atlantic steamship service capable of competing with the lines of ocean greyhounds plying to New York and Boston, attract considerable attention from students of the problem of navigating successfully the North Atlantic. Canada's latest step toward this goal is the perfecting of an arrangement with the Allan line to inaugurate a new service in the early fall, with two splendid boats, driven by turbines and making 17 knots, so that they will be able to compass the voyage from Liverpool to Montreal in six days. This, in the opinion of the shrewdest observers, is the nearest to a "fast" line that Canada will ever get, or that it is desirable, in her own interests, for her to get.

The first drawback to Canada's operating successfully a "fast" service is the ice, fog, and currents about the Newfoundland coast, which cause so many shipping disasters there. Indeed, it is Newfoundland, rather than Canada, which is the determining factor in this connection, for until the danger zones about the three points of the triangle Newfoundland makes at the mouth of the Gulf of St. Lawrence—Cape Race, Cape Ray, and Belle Isle—are properly safeguarded, no sane man will run ocean fliers there, and a "fast" Atlantic service will remain a dream.

Canada really has to face two considerations. Should she aim at "greyhounds" or ships of moderate speed, what port and route should be chosen? In weighing these two matters she must take into account that her population is less than 6,000,000, her wealthy class limited in proportion, and her traveling public inadequate to fill the saloon accommodations of an up-to-date New York liner. To provide boats to compete with these would mean a passenger service only, for the "greyhound" carries little or no freight, and makes her profit out of the heavy berth rates charged, while ships of 17 knots can give over to cargo the space she has to use for coal, and can reach port within a day of their speedier rival, cabin fares being also suited to people of moderate means. This would appear to be the service most likely to be productive of the greatest good to Canada.

The matter of route and terminal hinges mainly on the same principle. The St. Lawrence is Canada's natural sea road, and by a judicious expenditure can be made moderately safe for the seven months nature allows it to remain open. Its grievous defects can be remedied like those of Liverpool or Glasgow, Boston or New York. More lighthouses, fog alarms, and bell buoys are necessary; so are hydrographic surveys and a clearer determination of the currents that eddy around the three promontories of Newfoundland which cause most of the disasters that have won the St. Lawrence route its evil notoriety. The pilotage system of the inner waters is Canada's greatest defect today, and its remedying would do away with the cause of most of the lesser mishaps to shipping on the St. Lawrence route.

These facts granted, the logical summer terminus should be Montreal, with Quebec as the passenger base. Halifax or Sydney, N. S., as an all-the-year terminal, is absurd. For instance, Montreal, despite its tortuous channel, attracts many times the shipping that Quebec does, even with its easier approaches. St. John gets the freight in winter, while the passengers embark at Halifax, the idea being to save rail haul on freights. Thus the immutable laws of business competition will send ships to Montreal during the period of open water, as it involves the shortest railway or canal carriage for freight to tidewater. Halifax, in the same way, should be the winter terminal for passengers and mails; St. John for freights. Sydney, which is advocated as a rival, is frozen up every winter or the ice floes off the south coast of Newfoundland make access to it almost impossible for ocean boats. In addition, Sydney is separated from the mainland by Canso

strait, and until this is bridged or tunneled the port is further seriously handicapped. Halifax, on the other hand, is never blocked by ice, is accessible at all times, and is in direct communication with the whole continent. Sydney has but one advantage; in the event of the Canadian steamers plying through Cabot strait, to the south of Newfoundland, they could touch there to take on or put off passengers and mails for all points in Eastern Canada, as this would effect a great saving in time as compared with Montreal.

The average ambitious Canadian argues that, as his country is competing successfully with the United States in railways, she can also do the same in ocean steamships. But there is a very marked difference. The railway development was necessary to open up the boundless west and bring out millions of bushels of wheat for freighters to transport across the ocean, but her progress along commercial lines, amazing though it has been, is yet not the progress that calls for a service of transatlantic "fliers" as an accessory. To make these effective against American rivals, the ships would have to be their counterparts, and would have to be run more frequently than once a week, because there is virtually a daily service via New York now. The busy man would not wait a week for a Canadian boat when the train would land him in New York next morning to take a boat from there. The leisured man, on the contrary, who can afford to wait a week, is not so keenly concerned about having the fastest ship afloat ferry him across the herring pond. Moreover, Canadian liners do not average more than 100 first-class passengers a trip, and carry large freights to help pay their way, whereas New York liners average 350 passengers at far higher rates, and comprehend eight or ten different fleets, against Canada's one.

Another difference between railways and steamboats is that with the former rolling stock and roadbed may be improved by slow degrees, but the ocean flier, once completed, must be accepted as she is, faulty or faultless. And, in running her, as much coal must be used to generate a full head of steam when she carries only thirty passengers as when she carries 300, and her coal bill forms one of the largest items in her outlay. Thus, as neither the railway nor steamship company is in business save to make money, it follows necessarily that to guard against such contingencies enormous subsidies would be demanded; and it is difficult to see wherein the profit is to accrue to Canada for paying \$1,000,000 annually (as one concern asks) that her mails may be transported across the ocean a few hours more quickly than at present and her leisured class enabled to travel with greater comfort.

The policy of contenting herself with a service of 17-knot boats and applying her energies to developing her resources and enlarging her exports would bring more assurance of beneficial results to her than speculative competition with American steamship lines. To realize this it is only needful to study how the size and capacity of ships in the Montreal trade have grown with Canada's commercial needs. The St. Lawrence river has been deepened and the channel widened, straightened, and sentineled, until today ships of 10,000 tons are plying fearlessly where twenty years ago craft of half that tonnage could not float. Last year more ships visited Montreal than ever before, and the imports and exports were the largest in Canada's history. But the passenger traffic, save in the matter of immigrants, showed no proportionate expansion.

Last the geographical disadvantages from which Canada's Atlantic seaboard suffers make it very doubtful if the service would ever be a really fast one, in the sense in which that phrase is usually understood. The New York greyhounds have scarcely anything to obstruct them, for the whole ocean trip being able to run at full speed until they near the land on either side. But the Canadian liner must slow down when she reaches the ice and fog-infested areas or else she will batter herself against a floe or the rocky coast of Newfound-

land. Thus, while theoretically the Montreal liner would gain a day on her New York rival, she would really make no faster passage, on an average, for she is plying in congested and danger strewn waters for one-third of the whole voyage—the stretch between Montreal and the Grand Banks, and only in the finest weather can she make her best speed. The prospects, therefore, of a fast Canadian line are not very encouraging.

BATTLESHIPS FOR JAPANESE NAVY.

The two powerful battleships to be built for the Japanese navy by Vickers, Sons & Maxim at Barrow-in-Furness, and by Sir W. G. Armstrong, Whitworth & Co. at Elswick, in addition to four 12-in. guns mounted in pairs within barbettes of 9 in. hardened steel, will have in the four quarters of the upper deck a 10-in. gun within barbettes of 6-in. armor, covered with armored hoods. Within the battery on the main deck there will be on each broadside five 6-in. guns and centrally situated on each side on the upper deck one more of the same caliber, making in all 12 guns of 6-in. caliber. For repelling torpedo and submarine attack, there will be twelve 12-pounder guns, three 3-pounders and six Maxims, with the addition of six underwater torpedo-firing tubes. This is the most powerful gun battery of any battleship, as 10-in. guns take the place of 9.2-in. weapons in the King Edward class, while there are also two additional 6-in. quick-firers. The 10-in. guns fire 500 lb. shot with an energy of 28,000 foot-tons as compared with 20,000 foot-tons of 380 lb. shot with the 9.2-in. guns. The general lines of armor protection, incorporated for the first time in the Mikasa built by the Vickers company, will be followed and extended. The waterline belt will be 9 in. thick, then to the level of the upper deck there will be 6 in. armor; and there will be introduced for the first time, 4-in. armor above the level of the upper deck. No part of the upper works will be unprotected except for a length of about 80 ft. forward and 88 ft. aft. The guns behind the broadside armor will be separated by armor bulkheads. The 12-in. guns are to be 26 ft. above the load-water line, the 10-in. guns 22 ft. and the main deck 6-in. guns 14 ft. The sea speed is to be 18½ knots, attained with twin-screw, four-cylinder, triple-expansion engines, supplied with steam from twenty Niclausse boilers. The total coal capacity of each will be 2,000 tons, and no feature of importance in the fighting capabilities of the ship has been forfeited to give the primary elements of offense and defense. The length of 455 ft. is 30 ft. greater than in the case of recent British battleships; but beam and draught are about the same—78 ft. 2 in. and 26 ft. 7½ in. respectively. The displacement is 16,400 tons, about the same as the King Edward class.

INSURANCE TO ST. LOUIS EXPOSITION.

GLASGOW, April 15.—Underwriters have had a few weeks' spell of cessation from heavy losses of first importance, and even the overdue markets have been slack. The chief dealings in this market of any importance were over the large Glasgow ship *Lamorna*; and 85 guineas per cent has been paid for total loss only. She sailed from Tacoma, British Columbia, on Feb. 27 for Queenstown, with a cargo insured for £20,000, consisting of tinned salmon and 70,000 sacks of barley and wheat. Information was received that a ship's lifeboat and spars marked *Lamorna*, with a quantity of wreckage, had been washed ashore at Barclay sound, and that a large vessel had been sighted in distress in the vicinity on March 4. A steamer sent in search returned to Victoria, B. C., on March 31, without evidence to confirm the report that the *Lamorna* had come to grief, beyond the finding of certain letters. Later it was stated that the schooner *W. H. Smith* had sighted the *Lamorna* on March 7; but it is reported now by the steamer *Tees* that a number of hatches and chaff from grain had been washed ashore at Barclay sound. It is seldom that a vessel

turns up after so much as 85 guineas has been paid, but the *Ardnamurchan*, a very similar case was bound with a cargo of salmon from Fraser river, and arrived home safely after 90 guineas had been paid on the report that some of her cargo had been washed ashore. As recently as March last the *Voorwarts* from New York, was reported safe at Rio Grande within two hours after 90 guineas had been paid at Lloyd's to re-insure her.

The approach of the opening of the St. Louis exhibition has caused several exhibitors to place their insurances at Lloyd's, and policies have just been issued exceeding £150,000. Although large quantities of goods are being despatched uninsured at owners' risk, large demands have been made for insurance in advance. In consequence, underwriters have latterly obtained better premiums than were secured for the Chicago and Paris exhibitions. Rates for all risks vary from 3 to 10 guineas per cent, according to the class of exhibits; and the highest rate has been obtained for the insurance of valuable pictures, glassware, and marble statuary. In these cases underwriters' risks include breakage and theft from the place of despatch, until the safe return of the goods after the exhibition. Cheaper rates are charged for less fragile exhibits on which sea and fire perils constitute the chief risks, and fire risk only during the exhibition is covered for a nominal premium. General fire insurance has now developed into a very important branch of Lloyd's business, and is steadily increasing. Owing to the recent fires at Baltimore and Rochester, this month's fire settlements have been heavy, one firm alone having paid claims exceeding £50,000.

BRITISH WAR SHIP CONSTRUCTION DELAYED.

Complaints are being made regarding delay in the progress of warships now building owing to the absence at the builders' works of material ordered by the admiralty from other firms, not only armor and gun mountings, but also engines for dock yard vessels, and auxiliary machinery. The explanation is said to be that the contract for the hull is often given out under strict agreement as to delivery, while the details of boilers or gun mountings have not been settled, and the armor and the guns and mountings have not even been ordered. The ships of this year's program show this. Three battleships were ordered from the dock yards fully two months ago, and four cruisers of the Duke of Edinburgh class from Fairfield, Elswick, Barrow and Pembroke three or four months ago. Good progress has been made in the initial stages and the builders will be able to take delivery of armor before long; but this armor has not yet been ordered, although the armor plate makers have equipped their works for rapid construction. Time, however, is an essential element in the hardening of the plates, so that they cannot be hurried. Nor has anything been done in the way of ordering gun mountings, which are complicated masses of machinery, in which extreme accuracy is necessary. The manufacturers have done everything to expedite construction as well as precision, having formed great pits so that the whole structure from the bottom of the ship to the gun muzzle can be fitted before despatch. The best results could probably be got by giving the contract for a ship completely to one firm, which seems the reason why foreign ships are built in Britain in so much less time than is required for British ships.

The Cunard Line steamship *Slavonia* arrived in New York last week on her maiden trip from Trieste. The *Slavonia* was built by the Wallsend Slipway Engineering Co. at Newcastle, England, and was purchased by the Cunard Line especially for the Mediterranean trade. She is 510 ft. long, 59 ft. wide and 34 ft. deep. Her engines are triple-expansion of practically 6,000 H. P. and are designed to give a speed of 14 knots. On this trip she carried eighty-eight first class passengers, 830 steerage passengers, besides twenty-two stowaways.

SECRETARY SHAW ON SHIPPING.

Secretary of the Treasury Leslie M. Shaw was the guest of honor and chief speaker at the annual banquet of the Syracuse Chamber of Commerce on Tuesday evening of this week. Secretary Shaw, who has always been an earnest advocate for the upbuilding of an American merchant marine, took as his topic the subject of shipping. In part he said:

"Some of the best work of the republic has been accomplished non-partisanly. Permit reference to a few instance: During the administration of James Madison a law was passed giving the American ship builder and the American ship owner a monopoly of our coastwise trade. While this law has been many times assailed, no party has ever dared to repeal it, and its presence on the statute books is, therefore, with non-partisan approval. What is the result? We have the largest and most prosperous, the cheapest and best coastwise trade in the world. About forty years ago there was inaugurated a policy of internal improvement. By non-partisan votes large grants of land and large appropriations of money were offered as an inducement to the construction of trans-state and trans-continental railroads. Note the result. Five trunk lines, all but one assisted by the governments, cross the Rocky mountains, and as a result of these roads and their tributaries the entire West has become the most profitable market for the manufactured products of the Eastern states and in turn the greatest producers of food products which comprise over 60 per cent of our exports. Nor is this all. We have the most efficient, cheapest and the best railway service in the world. The average freight rates in Europe are three times as high as in the United States.

"As a part of this system of internal improvement the government has made liberal appropriations for the improvement of rivers and harbors. These appropriations have all been passed as non-partisan measures, and by a non-partisan vote. While some of these appropriations have been, perhaps, unwise, yet it is difficult to conceive the benefits our domestic and foreign commerce has received by reason of these appropriations.

"For more than 100 years statesmen have dreamed and talked and planned for an isthmian canal, and now the hope of a century bids fair to be realized. The government of the United States willingly pays \$50,000,000 for the right of way, then promises to spend probably \$200,000,000 in the construction and other millions in the maintenance, and perhaps other millions still in the defense of the canal, and then pledges itself to permit the commerce of the world to enjoy this short cut between the oceans on equal terms. Fortunately, the parties vie with each other in enthusiasm over the prospect of making this the greatest of all contributions to the world's commerce. I wish non-partisanly the parties would be as enthusiastic in their efforts to create a merchant marine to the end that American material-producers, and American ship builders, and American sailors might get their fair proportion of the world's carrying trade. The Spanish war, with its unexpected results, placed the Pacific ocean logically, if not actually where she has always been naturally, under the sovereignty of the stars and stripes. The opportunity is before us and sooner or later the American people will appreciate it and future generations will not be slow in rendering their meed of praise to the statesmanship, partisan or non-partisan, which secures to America the legitimate fruits of this enormous expenditure."

The Great Lakes Engineering Works of Detroit will launch the cargo steamer R. W. England, building for Frank Seither and others, next Thursday afternoon. The England is the first steamer which this company has constructed and the launching ceremony will therefore be worthy of the occasion. The company has arranged to take a large party of invited guests by boat from the foot of Third street to the ship yard, leaving Third street at 2 o'clock, local time.

DISCRIMINATING AGAINST SAILING VESSELS.

The coastwise coal carrying trade of the eastern Atlantic ports is not in a very satisfactory condition so far as the owners of sailing vessels are concerned. Conferences have been held lately which seek to remedy the situation. The issue is not especially with rates, but rather with discrimination in loading and unloading cargoes. Owners of sailing vessels maintain that the sailing craft is being discriminated against in various ports. They declare that while steamers are loaded with dispatch, that is within a day or two, sailing vessels are usually delayed from ten to twenty days. Added to this are the pilotage fees which some of the southern states insist upon charging sailing craft, so that altogether the lot of the sailing ship owner in the coastwise trade is not a happy one. The Atlantic Carriers' Association, made up of sailing ship owners, has been organized for the past three years and is doing what it can to remedy this condition of affairs. President F. S. Pendleton of the association in discussing the subject said:

"The main bone of contention between the sail vessel owners and the shippers is that the latter for years past have been loading steamers promptly at the expense of the sailing vessels; that is, if a sail vessel and a steamer arrived at the loading point at the same time, the steamer would be loaded in one or two days while the sailing ships would lay from ten to twenty days. Consequently the owners came together and decided that they would not any longer endure this discrimination, which has led up to the demand of the owners of sail vessels to have their turn in loading with their competitors. Nearly all of the coal companies can see that this request is fair but one or two concerns are still holding out claiming that the sail vessels should wait at the loading ports until their convenience permits them to load. This necessarily means long detention and consequently they cannot compete in freight rates with steamers that get immediate dispatch. On the same size sailing vessel the owners are willing to grant twelve days to load and discharge, but the shippers are not willing to even grant this, although they oblige the sail vessel to take the same rate as the steamer."

WORK AT NEWPORT NEWS.

NEWPORT NEWS, VA., April 26.—Work at the big plant of the Newport News Ship Building & Drydock Co. has never been more brisk in each and every department than the present season finds it. The number of warships and merchant craft under construction and the enormous volume of repair work in hand is taxing the utmost endeavors of the army of workmen, if not the capacity of the plant. The forces in every department are being constantly augmented, skilled workmen especially being in demand.

The big Pacific mail liner Manchuria, which was more than a week at the yard, having her bottom scraped and undergoing general repairs, has sailed for New York. She will load her first cargo there and proceed to San Francisco, where she will enter the service of her owners on the route between San Francisco, Honolulu and Hong Kong. The Manchuria came here from the yard of the New York Ship Building Co. where she was built, to be docked for painting and a general furbishing because the Camden yard could not dock her. On account of the experience with the Mongolia, some time ago, the shipyard officials and the masters of vessels in the harbor expected to lose many men when the Manchuria should make her departure, it being known that the liner was badly in need of seamen. The yard had no trouble, however, an agreeable surprise, nor have any of the ship captains lodged complaint with the police on account of desertions. During the time the vessel was at the yard watchmen were constantly on guard to prevent men from going on board.

LEBANON CHAIN WORKS GETS CONTRACT.

The Lebanon Chain Works of Lebanon, Pa., who severed their connections with the Standard Chain Co. of Pittsburg, Pa., last December, have been very fortunate since operating independently in securing large government contracts for high grade stud link chain. They have just been awarded contract for four suits of 120 fathoms each of 2¾-in. marine chain, to be furnished per specifications and blue print No. 1944-3 of the Boston navy yard. This chain is required for marine vessels to be manufactured of the highest grade of iron, and will be side welded. The Lebanon Chain Works have just completed five suits of 15½-in. light vessel chain for the five lightships now under construction at the New York Ship Building Co. The Lebanon Chain Works, since entering the field of manufacturing chain has made rapid strides under the able management of its president and general manager, Mr. Eli Attwood, who is not only a practical chain manufacturer, but understands thoroughly the manufacturing of high grade iron, and all high grade chain manufactured by this concern receives his personal attention. Each kind of raw material going into the puddle furnaces is carefully weighed and proportioned to the grade of chain required, after which it is rolled into puddle bars, then cut to desired length and piled by careful and competent workmen as at this stage of the work depends the forming of the grain of iron on which depends the strength; thence it is carried to the heating furnaces, giving it a careful good soaking heat, but not sufficiently strong to endanger the quality by overheating or burning. It is then run through rough and finishing rolls, getting all the passes possible as upon this a great deal depends in securing the article required for high grade chain iron. The bars after becoming cooled and delivered to the chain department, a piece is taken from each, nicked and bent back on itself to ascertain the grain and general appearance of the inside, as should it not come up to requirements for high grade chain, it is condemned for chain purposes.

With the large trade of high grade close link chain for dredging, steam shovel, mining and crane chains that it is catering to along the coast, lakes and inland, together with the order just awarded them, means a busy summer for this concern.

OBITUARIES.

William Matheison, of Chicago, engineer of the tug Perfection, died last week.

Mr. Horace S. Foote, for forty years connected with Chicago and Milwaukee steamboat lines, died at Milwaukee last week.

On March 22 word was received that Mr. Horace S. Foote died at the home of his daughter in Milwaukee. Mr. Foote was an old vesselman.

James Todd, a retired lake captain, died at Buffalo last week. His last command was the steamer Oceanica, on the Lehigh Valley Line. Capt. Todd was seventy years old and leaves a widow and three children.

Luther F. Lyman died at Cleveland Monday of the present week at the advanced age of ninety years. For nearly fifty years he had been incapacitated for an active life due to injuries received to the heart in his early life by over-exertion. He was the father of H. F. Lyman, vice president of the Upson-Walton Co. of Cleveland.

The American Steam Gauge & Valve Mfg. Co., Boston, Mass., announced the death of Mr. John L. Weeks, treasurer and general manager of the company. Mr. Weeks has been connected with the company for over thirteen years and the loss of his service is keenly felt, not only by the directors and stockholders, but by a large circle of friends.

Capt. James Hall, one of the best known old time sea captains, who figured as the hero in Richard H. Dana's book "Two Years Before the Mast," died at East Braintree, Mass.

Capt. Dana was second mate and then first mate of the vessel on which Dana sailed around the Horn to California, and later commanded a big merchantman in the China and East Indian trade. In 1861 he entered the service of the Pacific Mail Steamship Co.

John Reilly, president of the United States Metallic Packing Co., died at his home in Philadelphia recently. Mr. Reilly was born in Central Pennsylvania and represented Blair county in the forty-fourth congress. In early life he took up railroad work and was connected for thirty-one years with the Pennsylvania Railroad Co. He rose to the position of superintendent of transportation, which he held until his resignation in the early 80's. After severing his connection with the Pennsylvania he associated himself with the United States Metallic Packing Co., where he had been president for the past fifteen years. He was sixty-nine years old.

PHILADELPHIA MARITIME EXCHANGE.

The twenty-ninth annual meeting of the Philadelphia Maritime Exchange was held last week. Six directors were elected as follows: Thomas W. Winsmore, Frank L. Meal, C. E. Bushnell, W. S. Samuels, Samuel B. McDonald and E. J. Lavino. Concerning the trade of the port of Philadelphia the report of the directors said:

"Statistics for the port of Philadelphia show a slight falling off in the number of arrivals and clearances of vessels engaged in the foreign trade during the past year. Our export trade has been somewhat unsettled, and statistics record that only about 3,500,000 bu. of wheat were shipped from this port in 1903, as against 10,500,000 bu. in 1902. This shrinkage was caused by the diversion of western grain to gulf ports, thus leaving Philadelphia dependent for export upon the products of this and neighboring states. The export of corn aggregated 10,000,000 bu., as against 2,000,000 bu. in 1902. Owing to the high price of oats none was exported during 1903. The shipment of flour shows a small increase over 1902. Anthracite coal was exported in nearly double the quantity of 1902, while exports of bituminous coal fell off slightly. The quantity of petroleum exported was not quite as large as in 1902, but Philadelphia's share of the trade was over 50 per cent of the total exported from Atlantic ports. The importation of sugar in 1903 decreased somewhat in quantity, but maintained its percentage of the total imported at Atlantic ports."

CAPT. C. B. PARSONS ELECTED PRESIDENT.

The campaign of Mr. George L. Woolley for the presidency of the Maritime Association of the Port of New York would have been very amusing had it not also its serious side. Mr. Woolley is evidently a person devoid of any political sagacity, for he calmly announced that his candidacy stood for the contraction of the American coastwise laws, adding that the commerce to the Philippines was now carried in British ships and he did not want that changed. That would have been a very good argument had the election been held in England, but to advance it on this side of the water was simply grotesque. But nevertheless upon that platform Mr. Woolley stood for the presidency of the Maritime Association and was, of course, beautifully snowed under. Any other result was not anticipated; any other result would, indeed, have been sheer idiocy. Mr. Woolley received 188 votes as against 510 for Capt. C. B. Parsons. The election resulted as follows:

C. B. Parsons, president; Charles R. Norman, vice-president; Justus Ruperti, treasurer; J. Raymond Smith, G. B. Lockhart, George S. Dearborn, William D. Dickey, Paul Gottheil and F. S. Pendleton, directors.

A bill to grant the loan of \$2,000,000 to the industries at the Sault, established by the Consolidated Lake Superior Co., has passed the Ontario legislature, and it is now expected that the reorganization of the company will be proceeded with.

COL. SYMONS AND THE ERIE CANAL.

The efforts of the advocates of the enlargement of the canal to secure the services of Col. Symons was very well expressed by one of them in Washington last week when he stated:

"The co-operation asked of the government by permitting Col. Symons to give part of his time to the prosecution of the work is not out of the line of government participation in such enterprises. The canal is really a national project, although in this public spirited instance, to be paid for by the state of New York. It is a common practice for congress to vote appropriations for surveys for water routes which have less bearing upon interstate commerce than the great waterway proposed.

"In the case of the Illinois river large sums were expended and United States engineers engaged in solving the problem of connecting Lake Michigan with the Mississippi river by means of canal and river navigation. In this case all the expenses were borne by the United States, although the improvement might be called local, yet the benefits are interstate in every sense. In the case of the New York canal that state asked nothing from the government for surveys and plans, the liberal sum of \$200,000 out of the state funds having been devoted to the preliminary details.

"All this having been accomplished without a dollar of expense to the United States, the government is asked to carry out the scheme which really began under its own auspices. When Col. Symons took up these investigations it was as part of his duty as United States engineer in charge of river and harbor improvements at Buffalo. The earlier reports which he made were to the chief of engineers of the United States army, and the investigations were continued under the same auspices. There seems to be no valid reason why he should not be permitted to devote part of his time for the benefit of this public construction in which the lake and tidewater commerce of the United States have a direct interest. The plans and specifications without expert promotion by their originator would be much lessened in value, and might entail great loss in the utilization of the millions voted for the purpose by the legislature and ratified by the people of New York by a larger majority than ever given for any elective office or constructive work.

"So far from interfering with Col. Symons' performance of his regular duties as an engineer officer, his position on the canal board will be but advisory and therefore will in no way interfere with his military assignment. He is not proposed for engineer in charge of the work. This is entirely another branch paid for by the state of New York. The state simply desires his expert knowledge of the engineering features as essential to success, and asks sufficient of his services for that purpose. That their pay for them is not unusual as the laborer is worthy of his hire, in this instance at any rate. The services required will not necessitate his presence only for advisory purposes as occasion may suggest, which would not take more time than would belong to him as the law stands. He is not accepting a civil office, his proposed duties being purely advisory and not requiring all of his time he should not be curtailed in his regular duties.

"The canal is as important to the United States as a lake and tidewater route paid for out of the New York treasury as the Panama canal will be to the world from ocean to ocean paid for out of the treasury of the United States and built by the United States engineers. The United States is certainly as much interested in an interstate lake and canal highway of commerce in New York and seven other states as it is in an interoceanic canal in Panama for the benefit of England, Germany and France. As commerce now rules, England will get more out of the Panama project than the United States. The states bordering on the canal and the great lakes contributory to it have a population of 28,000,000. There are

sixty-six representatives in congress whose districts touch on the waterways, to which it will give outlet on United States soil from Duluth to New York. The traffic in grain, iron ore and other slow freights is almost beyond conception."

BRITISH ADMIRALTY CHARTS.

Following is a list of new and corrected charts of the British admiralty, handled by J. D. Potter, agent, 145 Menories, London:

NEW CHARTS.

- No.
- 3346 Germany. Jade and Weser rivers. (Plans—Nordenham, Bremerhaven and Geestemünde docks. Vegesack. Brake docks. Elsfleth. Bremen docks.)
 - 3411 Africa. Anchorages on the west coast—Garraway anchorage.
 - 3396 Japan. Nipon, northwest coast—Port Susa.
 - 2658 Solomon islands. Florida island—Gavutu and Tulagi harbors.
 - 1320 Spain, southeast coast. Cape San Antonio to Cape Tortosa. Plan added—Valencia, outer anchorage.
 - 2067 British Columbia. Harbors in Discovery passage, etc. (New plan—Beaver harbor.)
 - 1368 Solomon islands. Anchorages in Bauro or San Christoval island. (Plans added—Marunga harbor. Star harbor.)

Charts that have received additions or corrections too large to be conveniently inserted by hand, and in most cases other than those referred to in the admiralty notices to mariners:

- No.
- 1607 England, east coast—River Thames. North Foreland to the Nore.
 - 2309 Norway. Sheet VII.—Leka to Donnæsö.
 - 2275 White sea. Sheet VII.—Gulf of Onega.
 - 2300 Baltic sea. Gulf of Bothnia—Stiernö point to Fiäderäg, etc.
 - 2826 Baltic sea. Gulf of Finland—Approaches to Viborg.
 - 2694 France—Channels between Ile d'Ouessant and the mainland.
 - 1676 Greece—Gulf of Patras and approaches.
 - 3335 Labrador—Approach to strait of Belle Isle.
 - 232B Newfoundland island.
 - 2171 Nova Scotia—Sable island.
 - 230 Venezuela—Margarita island and Gulf of Cariaco.
 - 3188 Gulf of Mexico—Sabine pass.
 - 2689 British Columbia—Haro and Rosario straits.
 - 759A Madagascar—C. St. Andrew to Bevato island.
 - 758 Madagascar—C. St. Andrew to Antongil bay.
 - 84 Bay of Bengal—Chittagong river.
 - 1764 China, east coast—Amoy, inner harbor.
 - 1602 China—Approaches to the Yang tse kiang.
 - 2809 China, Yang tse kiang—Shanghai to Nanking.
 - 1270 Korea—Approaches to Chemulpho anchorage.
 - 1259 Korea—Fusan harbor.
 - 452 Japan—Yezo island with adjacent straits.
 - 356 Japan—Harbors on south coast of Nipon.
 - 2543 New Zealand. Sheet II.—The west coast from Nanukau harbor, etc.

The Canada Atlantic Transit Co., running in conjunction with the Canada Atlantic railway, will have an increased fleet out of Depot harbor the coming season. Mr. W. P. Hinton, general freight and passenger agent at Ottawa, says that it is the intention of the company to lease one or two additional vessels.

Erie, Champlain, Oswego, Cayuga and Seneca canals will be opened for navigation at noon, May 5.

SEEN AND HEARD ON THE LOOKOUT.

While not for a moment doubting the truth of the saying that the appearance of one swallow should not be regarded as an infallible indication of the summer's advent the yearly recurring activity of "laying moorings" off the yacht clubs' headquarters is not only suggestive but heralds the coming of robins, iced beverages and bathing suits. Said business of "laying moorings" may very well be regarded as a trade, and this is the time when some of the tricks proverbially associated with trades, can be learned. The owner of a 24-ft. sloop recently engaged one of these professional mooring experts to prepare stationary anchoring facilities for his floating luxury. A large rock to which a heavy 20-ft. chain had been securely tied was transported to the water's edge. A new 1¼ in. manila rope was then spliced in the end link of this chain. It should also be understood that to prevent "kinking" on account of the yacht's periodical swinging with the changing tides a swivel in one of the chain's links is deemed a necessity. As soon as the flood tide had sufficiently submerged the rock a 20-ft. dory was floated above it. Fastened to a stick placed across the dory's gunwales the rock was speedily raised, and rowed out to such a place off shore where the yacht might stretch her cable during a low tide without touching bottom. A can buoy attached to the manila rope serves as a guide for the yachtsman in quest of his anchoring place, while a small flag with the owner's initials was next added to enhance the conspicuity of this particular buoy among a multitude of similar cans bobbing in its immediate vicinity. As during a calm, or at the time of a slack tide the yacht obviously does not stretch her cable, a rope fastened to the anchor instead of the chain would soon chafe apart over the rocks. But a chain being unwieldy and hardly appropriate for incessant hauling across varnished gunwales and immaculately scrubbed decks the aforementioned rope had been added to the chain equipment. When a yachtsman speaks of "picking up" his mooring he refers to the act of bringing his boat up in the wind and so close to the mooring buoy that someone on the bow is able to reach it with a boat-hook. After dark it is difficult to locate a small can, especially as the latter is almost invariably painted white. A yachtsman intending to do a great deal of sailing after sundown should have his mooring can painted black. Among a fleet of boats at anchor after dark all those that are painted black may be easily distinguished from the shore while the white ones escape observation. In order to make war vessels the least conspicuous both at night and during the daytime, neither black nor white, but a dull lead color has been chosen as the navy's war paint. In the meantime, the moorings are in place, thus—spring is with us.

Even at a time when weather conditions were hardly suggestive of pleasure cruising the interest in motor boats showed no signs of abating. Like the cannons in that historic Balaklava unpleasantness, there appear to be motor boats to the right of us, and motor boats to the left of us. And as there are cannons and cannons, so there are motor boats and motor boats, though all make the same noise and are the source of the same odor. On several occasions I have been requested by prospective purchasers of motor boats to give some advice as to the type of motor and boat it might be best to select. And the answer must invariably be "name the state of your finances and the nature of your calling," or, in other words, for what purpose do you need a boat, and how much of that root of all evil are you prepared to give in exchange for one? For instance, the hotelkeeper on an island in Boston bay for years maintained a rowboat ferry service to the mainland. This spring the noise of a succession of gasoline explosions has been substituted for the splashing of the oars, for—a 20-ft. dory, propelled by a 2 H. P. gasoline motor, and accommodating eight passengers had been bought for \$200. An-

other man in that vicinity, but whose business with a boat is the pursuit of pleasure, bought a dory of similar length and power for \$500, of the latter price \$300 was charged for aquatic luxuries, while for the bare necessities of successful water transportation \$200 was required. For racing purposes the so-called automobile boat is confidently expected to take the cup, and incredibly large numbers have been ordered from the builders. But though called auto-boats none of your readers should suppose that unmodified automobile motors have been placed in these speedy craft. A motor, when placed in an automobile, is only called upon to exert its full power on exceptional occasions, while, if stationed in a boat, full and unabated demands are going to be made upon its strength and endurance. And this is one of the reasons why a boat equipped with an exact copy of an automobile motor can hardly be expected to give entire satisfaction. But whether needed for the pleasurable pursuit of business or the delightful pursuit of pleasure the motor boat has come to fill the place on the water that is occupied by the automobile on land. And now a suggestion to the intending purchaser of one of these small boats. However little mechanically inclined you may be any person with average intelligence can speedily be made aware of the principle of a motor of the explosive type and its "modus operandi."

Complaints that motors are unsatisfactory are dreaded by the manufacturer, and the latter's agent will take exceptional pains to carefully instruct the buyer of his product. In the smaller of these craft the motor is generally unprotected from rain and spray. Even should you take little pride in your boat the motor represents some capital that is not directly returning interest. From a business standpoint even one should guard against a speedy deterioration of the motor's market value. A canvas cover can hardly be deemed an efficient substitute for the watertight cabin. The following is my idea of a desirable motor boat: Length o. a., 32 ft.; 14 H. P., 4-cylindered gasoline motor. The latter to be located forward of the midship in a so-called "cuddy." Fuel tank forward of the motor, and large open cock-pit from cuddy door aft. A steering wheel either to port or starboard of the door, so that the helmsman by removing the slide can both steer and reverse the engine. A disadvantage of this arrangement is that so much weight—motor and stored gasoline—is placed forward. But a decided advantage is the complete protection of the sinews of propulsion—the motor.

A busy harbor without tugboats is as incongruous a supposition as a home without a mother. And no craft afloat can adopt themselves more speedily to the exigencies of the various services that may be required of them than these multitudinous tugboats. Though primarily intended for towing a tug not only may be used to run errands, act as tender, or do duty as an unofficial fire boat, but also as a passenger boat on a small scale she gives cause for the suspicion that there is an infinite variety of uses to which she could be put. During the winter months many tugs go out of commission, but also several of them whose venerable ages ought to entitle them to a vacation are relentlessly kept working among the ice floes. A tugboatman in New York harbor was recently asked if he deemed it possible, should a tug that was tied up for the night suddenly spring a leak, for the crew to escape from the wreck. And the rather strange answer was: "After dark all the old pie-wagons carry animated sounding rods." It appears that along South street, which is the Fifth avenue of those in tugboat society, the harbor steamboatmen have adopted an original medium of expression. For instance, a deckhand asking another for a towline is equivalent to a request for a drink, and this being answered with "I do not draw enough water," intimates the possession of an insufficiency of funds. A destitute tugboat deckhand, or fireman, who is without a shelter during the night is said to "carry the banner." And

these South street bannermen are often glad to become the before referred to "animated sounding-rods." An old tug makes her dock after dark and the tired crew soon turns in for the night. The request of a few of these misfortunates to be allowed to sleep near the boiler is generally granted. Numerous daily papers—to which they refer as bedsheets—are spread on the plates in a vain attempt to remain next to godly in surroundings hardly suggestive of cleanliness. The crew can now retire without having their slumbers disturbed by haunting fears of an untimely leak causing the ancient craft to sink, for—are not the bannermen sleeping only a few inches above the keelson? Should the tug make water at a dangerous rate no collection of copies of the most influential daily paper could prevent the novel bedchamber becoming a bathroom. Being tugboatmen by profession, and only bannermen through stress of circumstances, the bilge pumps can be started without the assistance of any of the crew, and the reasonable patrons of the floating lodging house return to their couches without even demanding to be furnished with dry bedding.—Good night!

Figures—and they are proverbially recorded as not to lie—show that of every ten derelicts six at least are American born. In view of this fact some advocates of an increase of the American merchant navy might conclude that an unconditional gratification of their desire might ultimately conduce to thickly dotting the ocean with these dangerous vagabonds. There are valid reasons, however, for this preponderance of the American registered derelict. Abandoned steamers and iron sailing vessels speedily tire of a purposeless wandering, and the fleet of derelicts fills depletions in its ranks from the squadrons of wooden sailing craft. And even of this latter type of vessel it is not the deep water man, but the coaster that evinces the most aptitude as a recruit in the army of dangerous aquatic vagabonds. While America cannot boast the possession of a fleet of steamers and deepwater sailing craft commensurate with the country's resources, length of coast, etc., the coasting trade as carried on with the multi-masted wooden schooners has attained gigantic proportions. The lumber-laden schooner, on account of the nature of her freight, is almost certain to remain afloat however seriously injured below the water line. Generally old vessels that are no longer deemed fit to engage in other trades become "lumber drovers," or, as called along the coast of Maine, "Machias fruiters." Thus involuntarily contributing the largest proportion of members to the society of derelicts America intends to maintain a fleet of steamers for the sole purpose of ridding the coast of these undesirable encumbrances. Men of war and revenue cutters have often been employed in this business of clearing the ocean highway. The type of steamer best suited for this scavenger work on the high seas has as yet not been decided upon. Some one advocated a boat with a ram; others said that one large gun would be sufficient for the purpose of sinking anything undesirable floating within range. But whatever boat is finally selected as best adapted for this work of safeguarding navigation no difficulty will be had in securing a crew. A berth on such a craft, which is neither a passenger boat nor a freighter, and on board of which the necessarily strict discipline of the man of war is not enforced, must appeal to even the most dissatisfied of mariners.

F. H.

RAISING LEVEL OF LAKE ERIE.

Editor MARINE REVIEW: Referring to your letter of April 4, 1904, and to inclosed copy of a letter from Mr. James Stone, which refers (1) to proposed improvement in the Niagara river, and (2) to the matter of lake levels, and specifically to the question of raising the level of Lake Erie by means of a submerged dam, I feel constrained to state, with all possible respect for Mr. Stone, that I do not believe a submerged dam

2 ft. in height at the point where the surface of Lake Erie perceptibly commences its descent into the Niagara river would generally, under nominal conditions, sensibly raise entire level of the lake.

My experience with several small New England mill streams, where it has been desirable to raise the level of a stream at a particular point, convinces me that a submerged dam has what may be termed only a local effect, which may be compared to the "tripping" of a swell first feeling the ground. There is, with current of sufficient velocity, a local increase in depth of water over the crest of a submerged dam; but this is the uplifting of an arrested wave rather than any general increase in water level back of said dam. I am informed, for example, at the office of the state engineer of New York, that some years ago a submerged dam 14 in. in height was built at Phoenix, N. Y., in the stream forming the outlet of Onondaga lake and other waters; this dam raised the water level but 2 in. in the lake, thus illustrating the fact that the effect of a submerged dam is largely local.

ALFRED B. FRY,

New York, April 20. Superintendent Public Building.

ANNUAL MEETING BOSTON TOW BOAT CO.

At the annual meeting of the Boston Tow Boat Co., held in Boston last week the directors were re-elected. The annual report for the year ended March 31 shows:

| | 1904. | 1903. | 1902. |
|----------------------------------|----------|-----------|-----------|
| Profit and loss | \$40,000 | \$40,000 | \$40,000 |
| Insurance and depreciation | 52,471 | 50,000 | 50,000 |
| Net gain for year | *3,559 | 77,471 | 167,746 |
| | \$88,912 | \$167,471 | \$257,746 |
| Dividends | 75,000 | 75,000 | 75,000 |
| Surplus | \$13,912 | \$92,471 | \$190,246 |

*Net loss for the year.

President Alfred Winsor: "The loss on the business for the year was \$3,559. The dividends which have been paid the past year have been charged to profit and loss, leaving to the credit of that account \$13,912. The three large steamers now running in a line from the Pacific to the Orient have made, within the last three months, a profit of \$17,000, instead of a loss as during the previous nine months. Our harbor tugs are now making money. While the general commerce of this port has not improved, we trust this very soon will change for the better, and the other branches of business show a profit. The amount of \$69,397 has been spent for ordinary repairs upon the plant, and charged to operating expenses. Your property is insured for \$1,591,650."

Governor Odell has sent to the senate at Albany the appointment of Col. Thomas W. Symons of the United States engineer corps to be a member of the advisory board of consulting engineers on the enlargement of the Erie canal. The appointment was confirmed. Col. Symons was granted an indefinite leave of absence without pay by congress in order that he might serve upon this commission. It was indeed a great tribute to Col. Symons' efficiency that the government should have been loath to lose his services even temporarily, while at the same time the state of New York should have been eager to obtain them. Col. Symons will now serve upon the canal board without sacrifice of his official position in the army. Both sides of the house of representatives congratulated the great courage and self reliance of the state of New York in undertaking so vast an enterprise without soliciting financial aid from the federal government. It was declared to be an innovation worthy of emulation throughout the country.

WANTED and FOR SALE Department.**FOR SALE.****Schooner for Sale.**

For Sale—Schooner Minnie Slauson. 317 gross tons. Rated A 2. For information inquire of Capt. L. Larson, 812 Huron St., Manitowoc, Wis. tf

Tug for Sale.

Tug Duncan City. Address, Geo. Pankrantz, Lumber Co., Sturgeon Bay, Wis. tf

Tug for Sale.

Tug Frank Canfield, 75 ft. long. Engine 18 x 20, boiler 6½ x 13. Address Canfield Tug Line, Manistee, Mich. Apr. 28

Diving Outfit For Sale.

Three iron bound cases containing a complete diving outfit for \$175 cash. The suit and equipment is in first-class working order with 70 ft. new air hose. Bart E. Linehan, Dubuque, Ia. May 5

Steamer for Sale at Cost, \$13,500.

The old Anchor Line twin-screw steamer Gordon Campbell. Two decks, gangways, hoisting machinery, etc. Suited to carrying coal, lumber, ties, package freight, etc. Spent \$3,500 in repairs this year. Other business requires my undivided attention and I will sell for cost to me. W. F. Carroll, 1011 Ashland block, Chicago. tf

Steam Yacht for Sale.

Steam Yacht Vita—Length 100 ft., beam 18 ft. Iron frame. Fully equipped. Can be seen at her anchorage at Detroit. Inquire of J. M. Kennedy, 915 Union Trust Bldg., Detroit, Mich. May 12

FOR SALE.**Yacht for Sale.**

New beautiful 100-ft. steam yacht, fully equipped. Owner physically unable to use yacht. Will sell for any reasonable offer. Yacht can be seen in Detroit. Address M. J. Steffens, 57 East Twenty-second st., Chicago. tf

Two Steamers for Sale.

The Union Transit Co. in closing out its business offers the steamers John M. Nicol and Eber Ward for sale.

The steamer John M. Nicol is of the following dimensions: length 263 ft., beam 41 ft., depth 26 ft. Triple expansion engines with 900 indicated H.P. Steel boiler-house enclosing two Scotch boilers with steam pressure of 150 lbs. About \$30,000 laid out for repairs on this steamer in the past year.

Steamer Eber Ward.—Length 213 ft., beam 37 ft., depth 23 ft. Engines F. & A. compound with an indicated H.P. of 600. One Scotch boiler with steam pressure of 110 lbs.

For further information apply to H. C. French, 900 Ellicott Square, Buffalo, N. Y. May 12

Freight and Passenger Steamer.

For Sale.—Up-to-date, complete, speedy excursion freight and passenger steamer. Accommodate 400 to 500. Address Indiana Trans. Co., 2 Rush St., Chicago. May 5

Sand and Gravel Outfit.

For Sale Cheap.—Complete sand and gravel outfit. Most economical plant in North America. For particulars address Osborn & Co., Duluth, Minn. May 5

FOR SALE.**Yacht Boiler for Sale.**

For Sale.—First-class second-hand upright yacht boiler, 45 in. by 46 in., submerged flues, 125 lbs. pressure. Also engine (6 by 8), shaft, stern bearing, propeller and rudder. Address J. & T. Hurley, 149 Jefferson Ave., Detroit, Mich. Apr. 28

Steam Yacht Catherine.

For Sale.—Length 78 ft., beam 18 ft., triple expansion engines, water tube boiler, allowed 200 lbs.; electric light, search light, mahogany deck house 9 by 16, power launch, complete outfit, all in first-class condition. One of the best family cruising yachts on the Lakes. Inquire Wickes Bros., Saginaw, Mich. tf

Buckets.

For Sale.—Two clam-shell buckets (standard makes) and a number of Long patent drop bottom coal buckets. Address Box 64, Marine Review, Cleveland. tf

WANTED.**Passenger Steamer Wanted.**

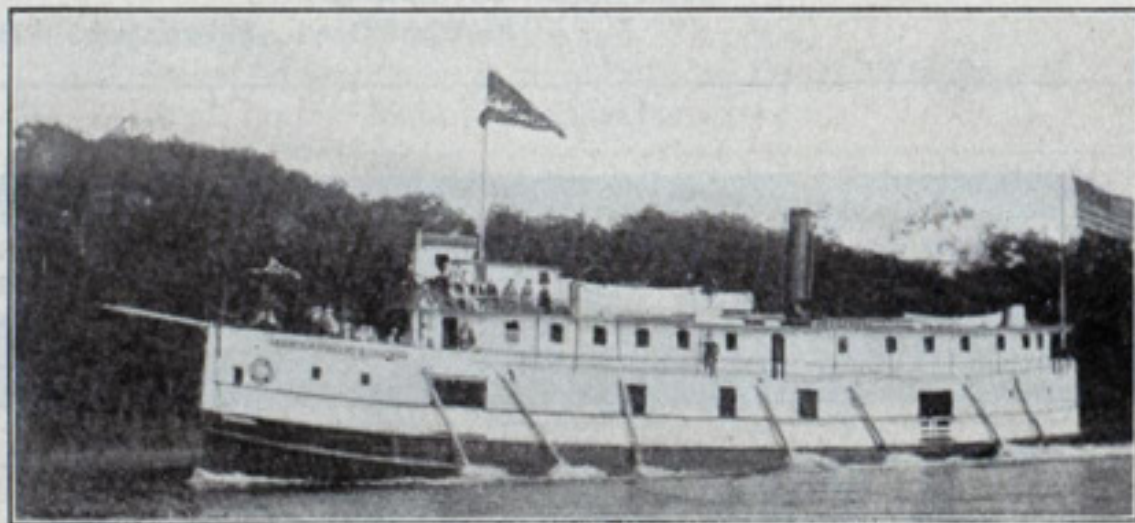
Passenger steamer to carry 700 or more passengers from Milwaukee to Whitefish Bay Resort, Wisconsin. Exclusive landing rights given for pier. Address H. Konopka, Whitefish Bay, Wis. May 5

Designer Wanted.

Wanted.—First-class designer and constructor who thoroughly understands the business of manufacturing Naphtha Launches and high grade pleasure boats. Address, giving full particulars as to experience, salary desired, etc., Box 63, Marine Review, Cleveland. Apr. 28

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This boat line, two steamers, docks, etc., for sale.



Steamer Saugatuck—Length 125 ft., breadth 22 ft., depth 8 ft., 147 net tons. Licensed to carry 84 regular, 225 excursion passengers.

For full particulars apply to Griffin & Henry, Saugatuck, Mich. May 5

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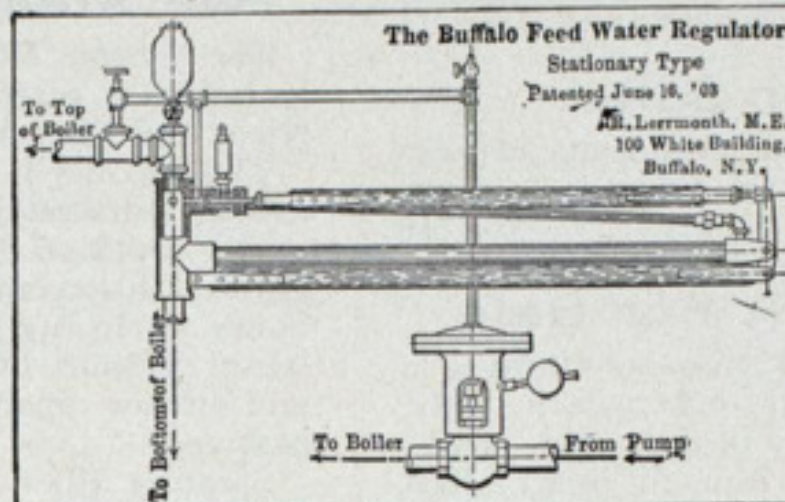
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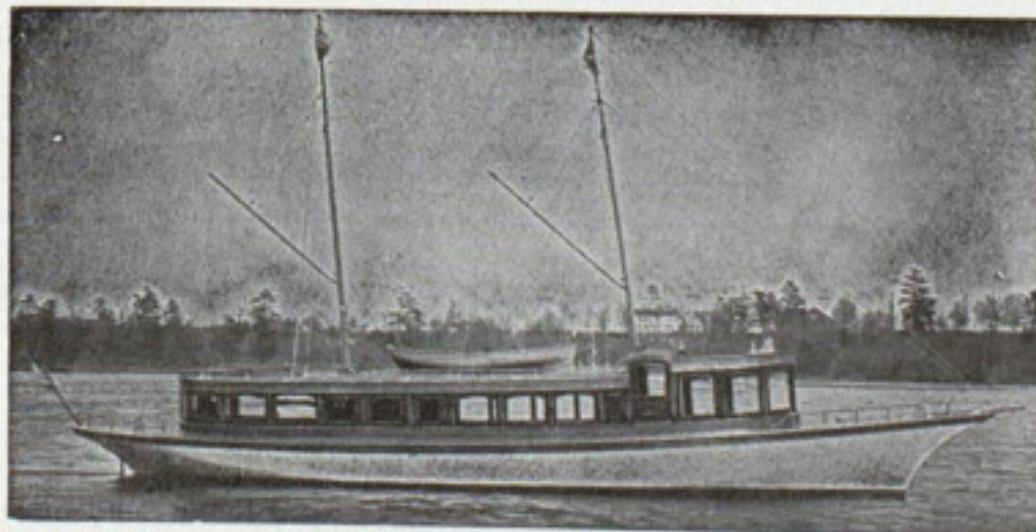
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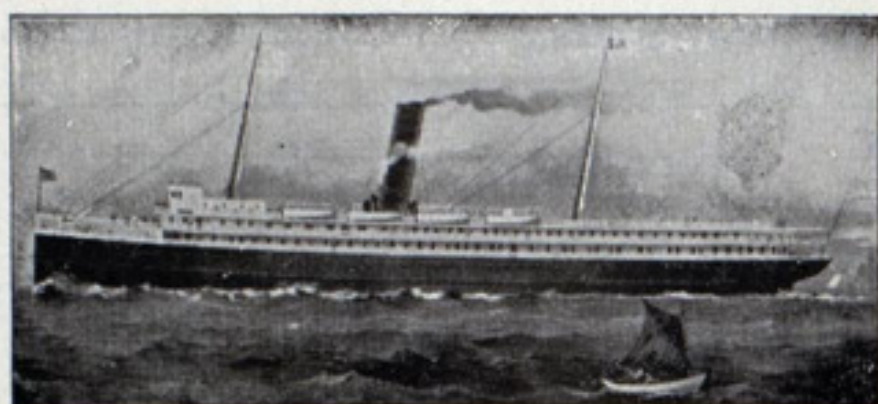
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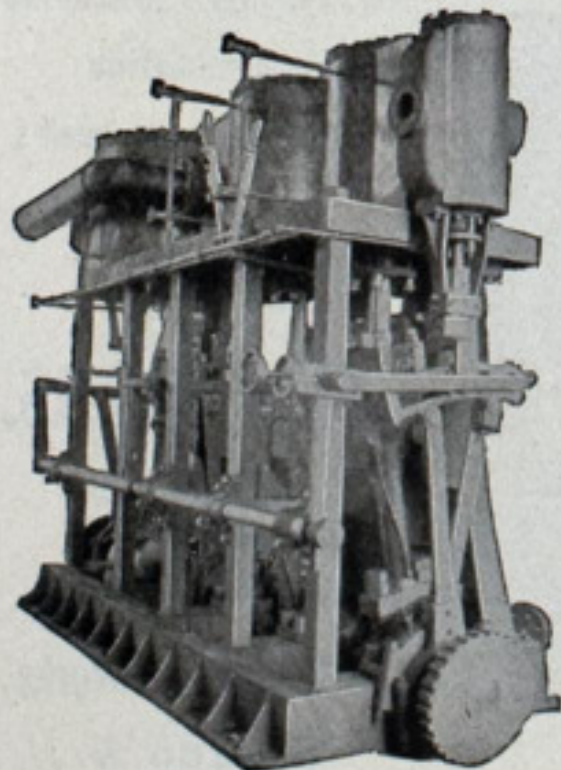
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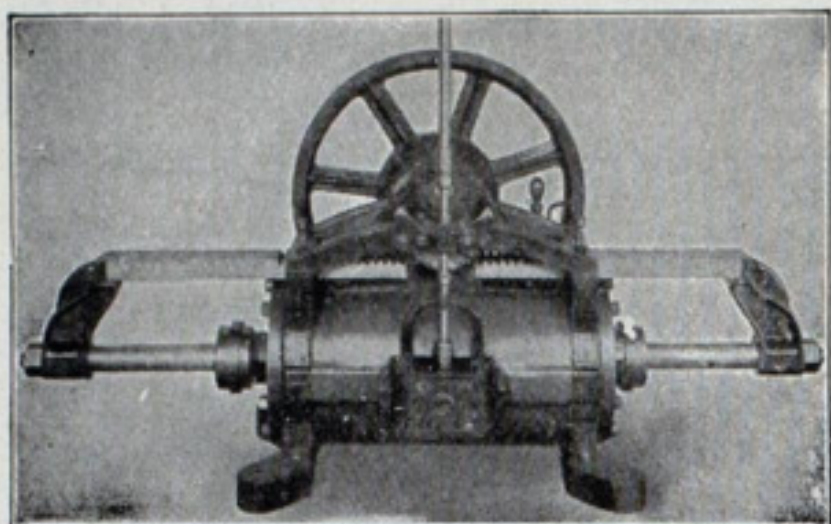
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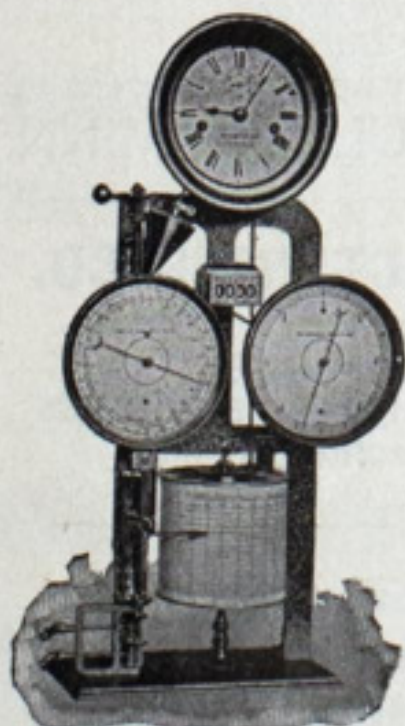
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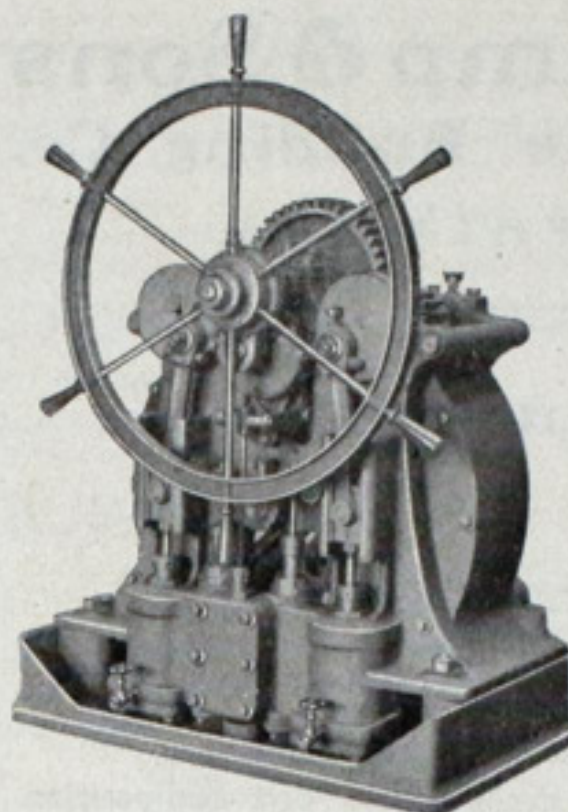
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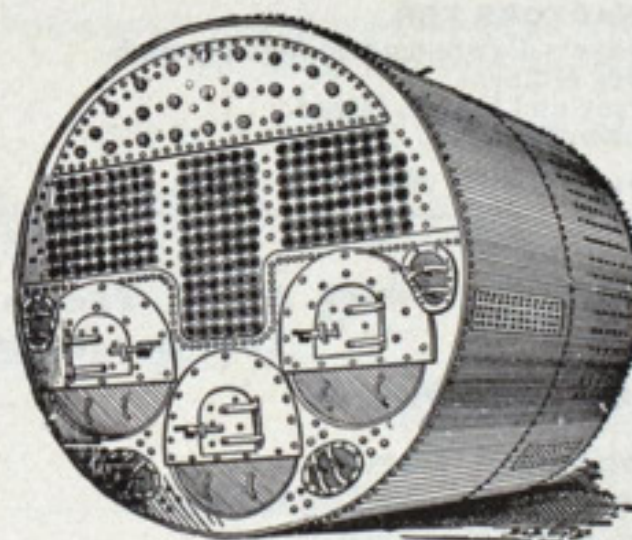
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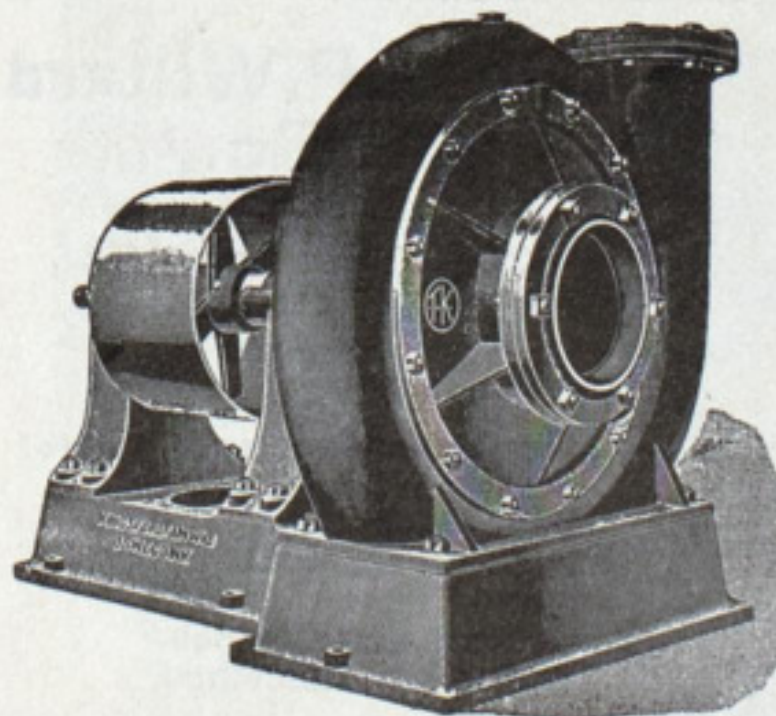
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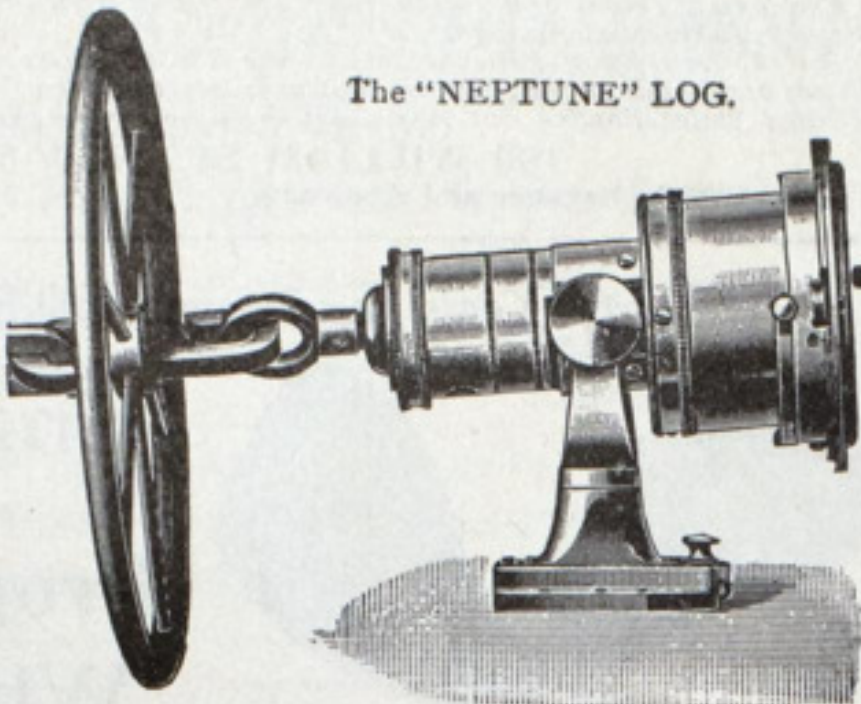
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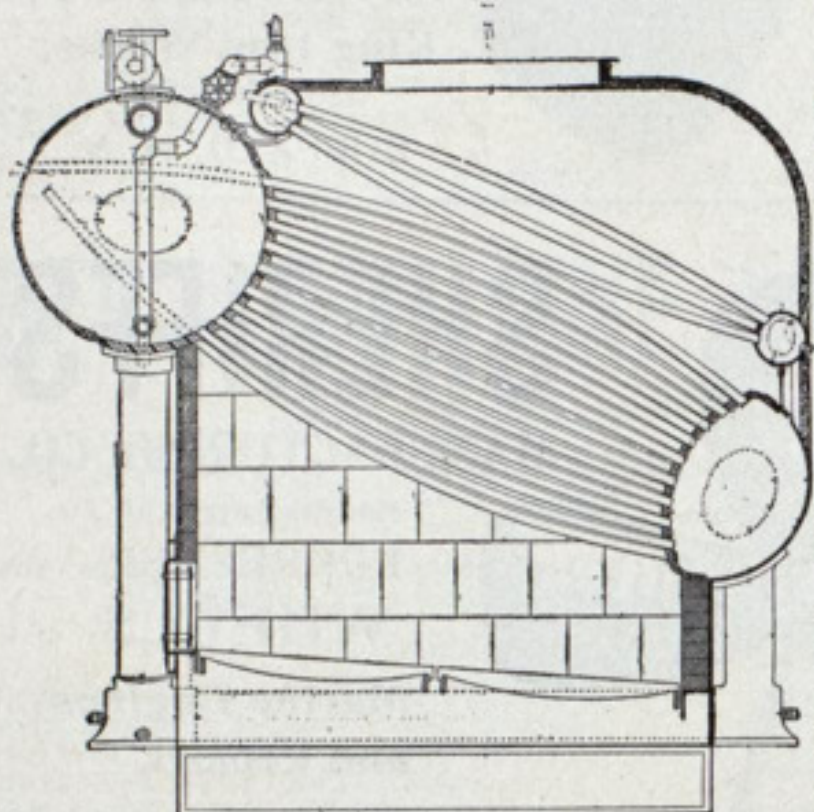
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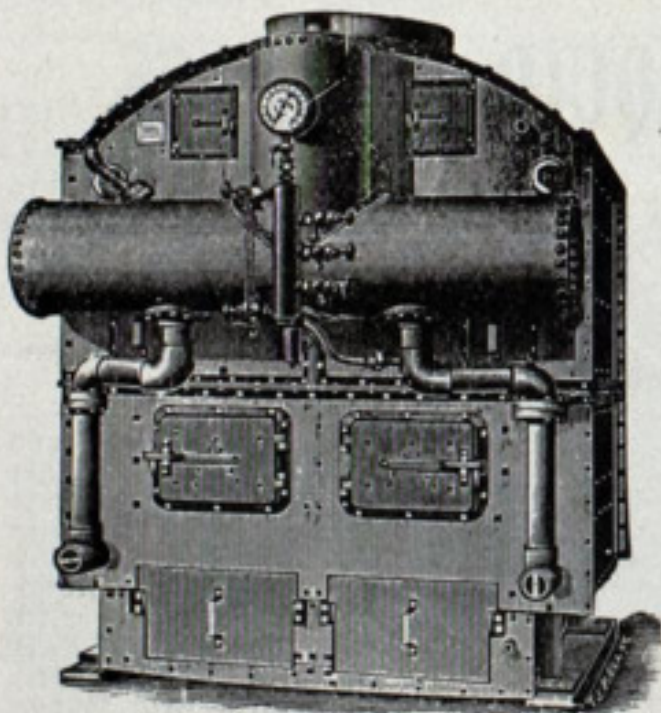


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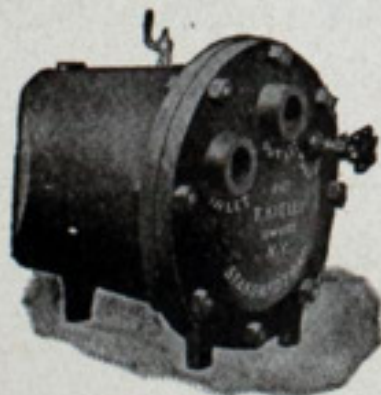
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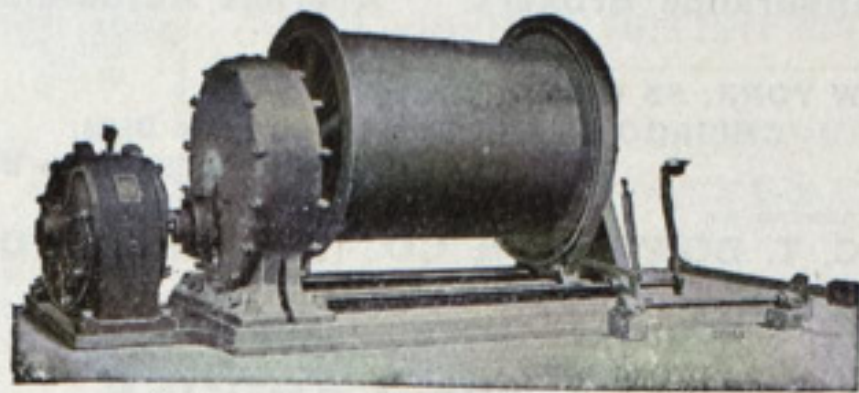
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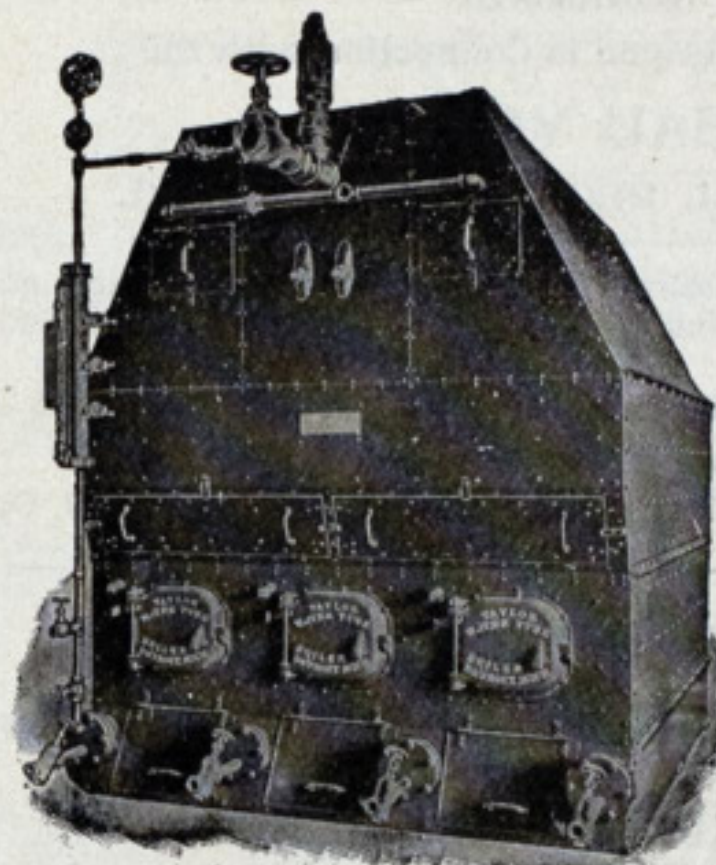
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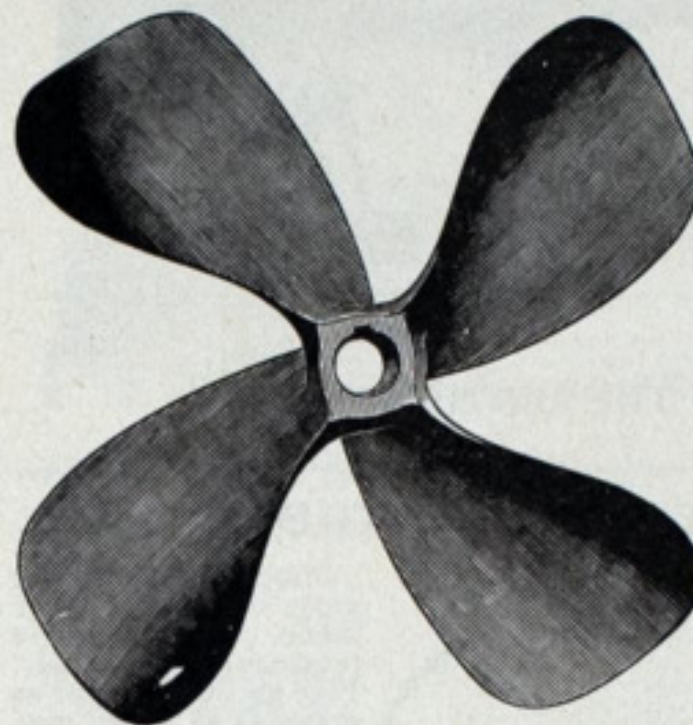
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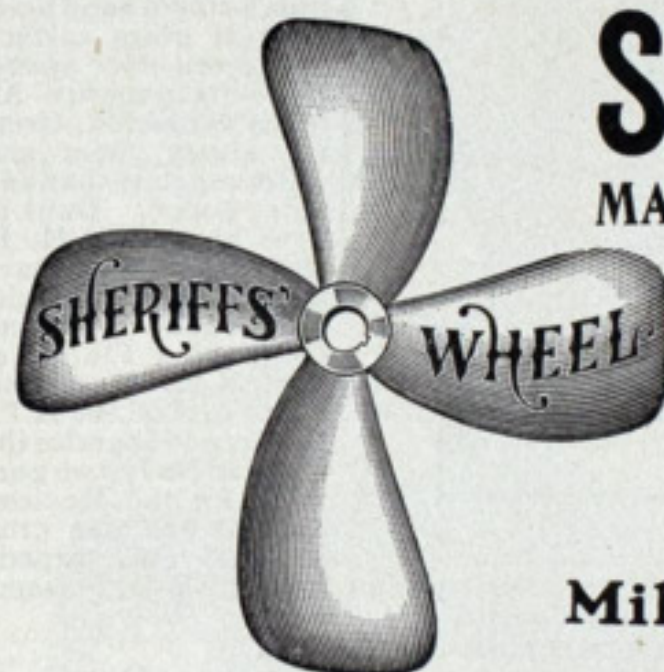
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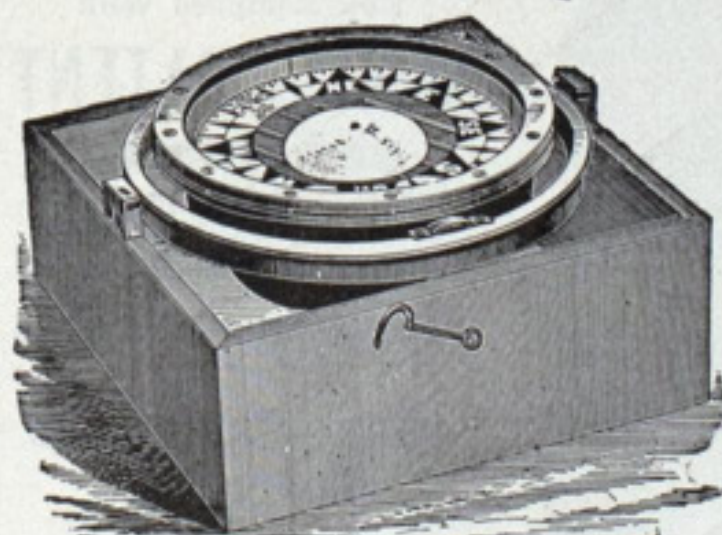
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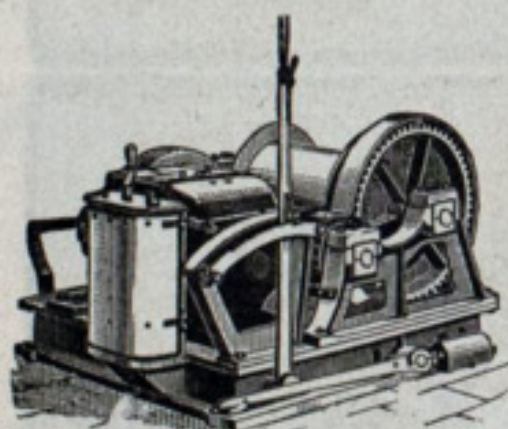
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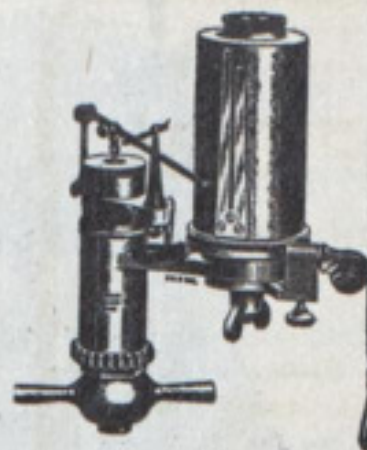
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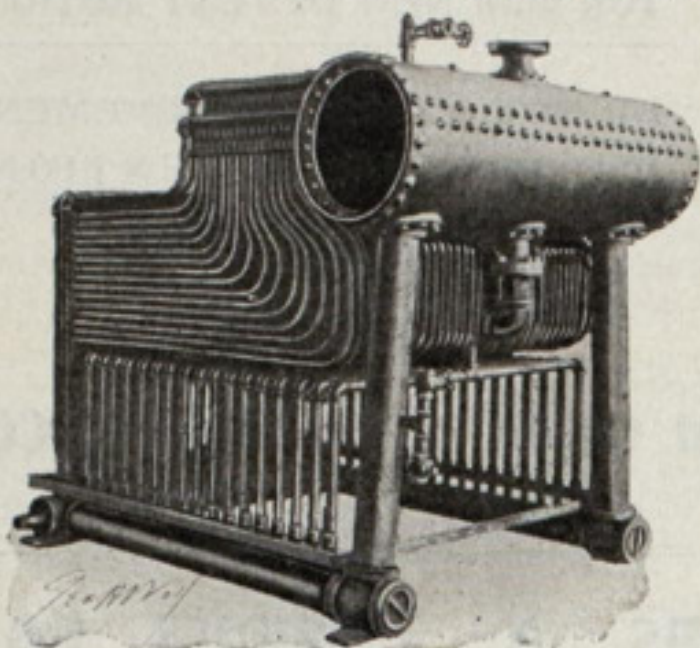
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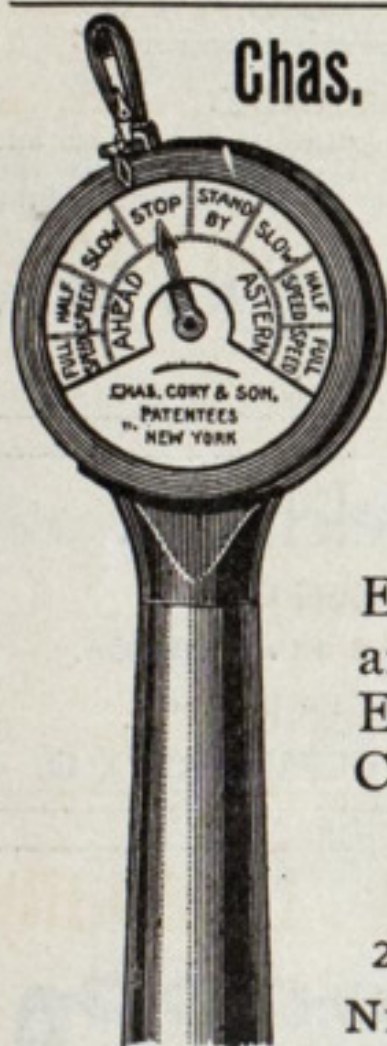
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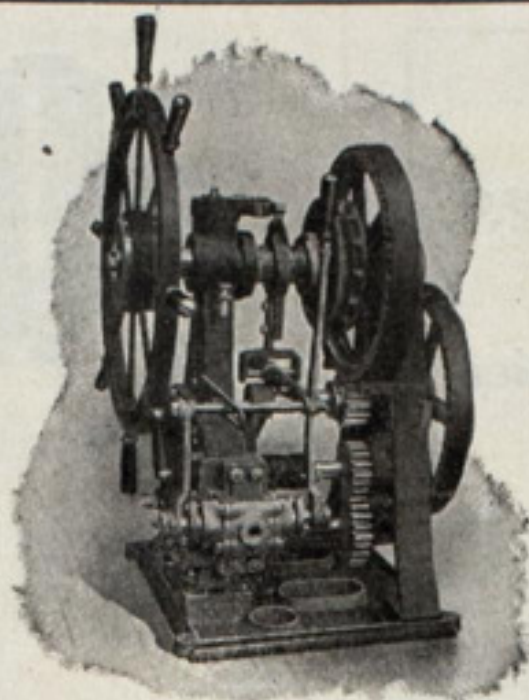
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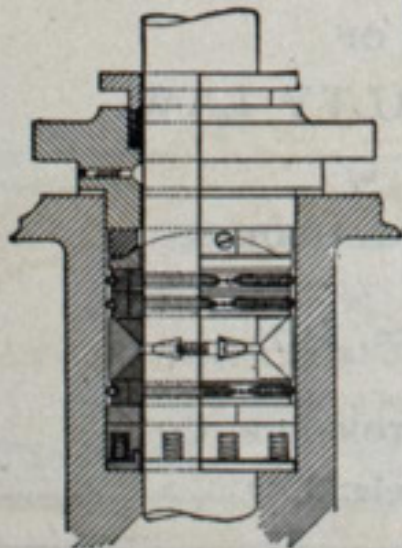
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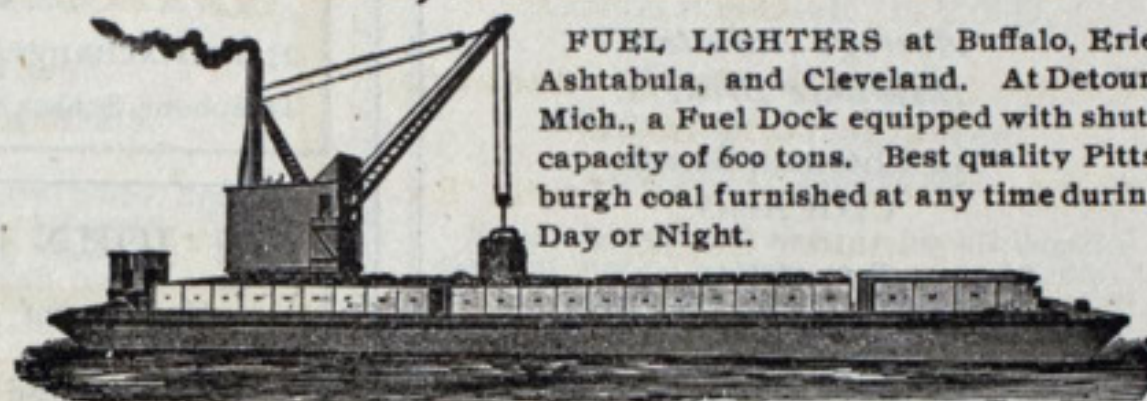
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Smith, Stanley B., & Co.....Detroit.
Smith Coal & Dock Co., Stanley B.....Toledo, O.
Youghiogheny & Lehigh Valley Coal Co.....Chicago.

GASKETS, RUBBER.

New York Belting & Packing Co.....New York.

GAS BUOYS.

Safety Car Heating & Lighting Co.....New York.

GAS AND GASOLINE ENGINES.

Chase Machine Co.....Cleveland.
Temple Pump Co.....Chicago.

GAUGES, STEAM AND VACUUM.

American Steam Gauge Co.....Boston.
Ashton Valve Co.....Boston.
Lunkenheimer Co. Cincinnati.
Standard Gauge Mfg. Co Syracuse, N. Y.

GAUGES, WATER.

Bonner & Co., Wm. T.....Boston.
Lunkenheimer Co. Cincinnati.
Standard Gauge Mfg. Co.....Syracuse, N. Y.

GRAPHITE.

Dixon Crucible Co., Joseph.....Jersey City, N. J.

HAMMERS, STEAM.

Chase Machine Co.....Cleveland.

HEATING APPARATUS.

Bayley & Sons Co., Wm. Milwaukee, Wis.
Sturtevant, B. F. Co.....Boston.

HOISTS FOR CARGO, ETC.

American Ship Building Co.....Cleveland.
Brown Hoisting Machinery Co. (Inc.).....Cleveland.
Chase Machine Co.....Cleveland.
Elwell-Parker Electric Co.....Cleveland.
General Electric Co.....New York.
Hyde Windlass Co.....Bath, Me.
Lidgerwood Mfg. Co.....New York.
Marine Iron Co Bay City.
Pawling & Harnischfeger.....Milwaukee.
Westinghouse Electric & Mfg. Co.....Pittsburg, Pa.

HOLLOW STAYBOLT IRON.

Falls Hollow Staybolt Co.....Cuyahoga Falls, O.

HOSE, RUBBER.

New York Belting & Packing Co.....New York.

HYDRAULIC DREDGES.

Great Lakes Engineering Works.....Detroit.

HYDRAULIC TOOLS.

Watson-Stillman Co., The.....New York.

ICE MACHINERY.

Great Lakes Engineering Works.....Detroit.
Roelker, H. B.....New York.

INDICATORS FOR STEAM ENGINES.

American Steam Gauge Co.....Boston.
Ashton Valve Co.....Boston.

INJECTORS.

American Injector Co.....Detroit.
Crane Co.....Chicago.
Jenkins Bros.New York.
Lunkenheimer Co.....Cincinnati.
Penberthy Injector Co.....Detroit, Mich.

INSURANCE, MARINE.

Brown & Co.....Buffalo.
Elphicke, C. W. & Co.....Chicago.
Fleming & Co., P. H.....Chicago.
Frankfort Marine, A. & P. G. Ins. Co.....New York.
Gilchrist & Co., C. P.....Cleveland.
Hawgood & Co., W. A.....Cleveland.
Helm & Co., D. T.....Duluth.
Hutchinson & Co.....Cleveland.
McCarthy, T. R.....Montreal.

INSURANCE, MARINE.—Continued.

McCurdy, Geo. L.....Chicago.
Mitchell & Co.....Cleveland.
Parker Bros. Co., Ltd.....Detroit.
Peck, Chas. E. & W. F.....New York and Chicago.
Prindiville & Co.....Chicago.
Richardson, W. C.....Cleveland.
Sullivan, D. & Co.....Chicago.
Voss, F. D.....New York.
Weeks, F. H.....New York.

IRON ORE AND PIG IRON.

Bourne-Fuller Co.....Cleveland.
Hanna, M. A. & Co.....Cleveland.
Pickands, Mather & Co.....Cleveland.

LAUNCHES—STEAM, NAPHTHA, ELECTRIC.

Marine Construction & D. D. Co.....
.....Mariner's Harbor, S. I., N. Y.
Truscott Boat Mfg. Co.....St. Joseph, Mich.
Willard, Chas. P.....Chicago.

LIFE PRESERVERS, LIFE BOATS, BUOYS.

Armstrong Cork Co.Pittsburg.
Carley Life Float Co.....New York.
Dreln, Thos. & Son.....Wilmington, Del.
Kahnweiler's Sons, D.....New York.
Lane & DeGroot.....Long Island City, N. Y.
Marine Construction & Dry Dock Co.....
.....Mariner's Harbor, S. I., N. Y.

LIGHTS, SIDE AND SIGNAL.

Russell & WatsonBuffalo.

LOGS.

Nicholson Ship Log Co.....Cleveland.
Walker & Sons, Thomas.....Birmingham, Eng.
Also Ship Chandlers.

LUBRICATING GRAPHITE.

Dixon Crucible Co., Joseph.....Jersey City, N. J.

LUBRICATORS.

Crane Co.Chicago.
Lunkenheimer Co.Cincinnati.

LUMBER.

Martin-Barriss CoCleveland.
Shurick, F. S.New York.

MACHINISTS.

Chase Machine Co.....Cleveland.
Gogebic Steam Boiler WorksDuluth, Minn.
Lockwood Mfg. Co.....East Boston, Mass.
Macbeth Iron Co.....Cleveland.
Moore & Co., H.....Milwaukee.
Union Machine & Boiler Co.....Cleveland.

MACHINE TOOLS (WOOD WORKING).

Atlantic Works, Inc.....Philadelphia.

MARINE RAILWAYS, BUILDERS OF.

Crandall & Son, H. I.....East Boston, Mass.

MATTRESSES, CUSHIONS, BEDDING.

Fogg, M. W.....New York.
Meckes John.....Cleveland.
Siegel Cooper Co.....New York.
Sterling & Welch Co.....Cleveland.
Williams & Rodgers Co.....Cleveland.

MECHANICAL DRAFT FOR BOILERS.

American Ship Building Co.....Cleveland.
Detroit Ship Building Co.....Detroit.
Great Lakes Engineering Works.....Detroit.
Sturtevant, B. F. Co.....Boston.

METALLIC PACKING.

Katzenstein, L. & Co.....New York.
U. S. Metallic Packing Co.....Philadelphia.

METAL POLISH.

Bertram's Oil Polish Co.....Boston.

MOTORS, GENERATORS—ELECTRIC.

General Electric Co.....Schenectady, N. Y.
Bayley & Sons Co., Wm. Milwaukee, Wis.
Sturtevant, B. F. Co.....Boston.
Westinghouse Electric & Mfg. Co.....Pittsburg, Pa.

NAUTICAL INSTRUMENTS.

Ritchie, E. S. & Sons.....Brookline, Mass.

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NAVAL ARCHITECTS.

Hynd, AlexanderCleveland.
 Kidd, JosephDuluth, Minn.
 Lovejoy, H. O.Buffalo.
 Matteson & DrakePhiladelphia.
 Mosher, Chas. D.New York.
 Nacey, JamesCleveland.
 Rice, HenryBuffalo.
 Sadler, Perkins & Field.....New York.
 Steel, AdamCleveland.
 Wood, W. J.Chicago.

OAKUM.

DeGrauw, Aymar & Co.New York.
 Stratford Oakum Co.Jersey City, N. J.

OIL FOR PAINTING.

Sipe & Co., James B.Allegheny, Pa.

OILS AND LUBRICANTS.

Dixon Crucible Co., Joseph.....Jersey City, N. J.
 Standard Oil Co.Cleveland

PACKING.

American Steam Packing Co.Boston.
 Crane Co.Chicago.
 Jenkins Bros.New York.
 Katzenstein, L. & Co.New York.
 New York Belting & Packing Co.New York.
 United States Metallic Packing Co.Philadelphia.

PAINTS.

Baker, Howard H. & Co.Buffalo.
 Detroit Varnish Co.Detroit.
 Detroit White Lead Works.....Detroit.
 Forest City Paint and Varnish Co.Cleveland.
 New Jersey Zinc Co.New York.
 Sipe & Co., James B.Allegheny, Pa.
 Upson-Walton Co.Cleveland

PATENT ATTORNEYS.

Thurston & BatesCleveland.

PATTERN SHOP MACHINERY.

Atlantic Works, Inc.Philadelphia

PILE DRIVING AND SUBMARINE WORK.

Buffalo Dredging Co.Buffalo.
 Chicago & Gt. Lakes Dredge & Dock Co.Chicago.
 Dunbar & Sullivan Dredging Co.Buffalo.
 Fitz-Simon & Connell Co.Chicago.
 Parker Bros. Co., Ltd.Detroit.
 Smith Co., L. P. & J. A.Cleveland.
 Starke Dredge & Dock Co., C. H.Milwaukee.

PIPE, WROUGHT IRON.

Bourne-Fuller Co.Cleveland.
 Crane Co.Chicago.
 Macbeth Iron Co.Cleveland.

PLANING MILL MACHINERY.

Atlantic Works, Inc.Philadelphia.

PLATES—SHIP, STRUCTURAL, ETC.

Bourne-Fuller Co.Cleveland
 Otis Steel Co.Cleveland.

PNEUMATIC TOOLS.

Allen, John F.New York.

POLISH FOR METALS.

Bertram's Oil Polish Co.Boston.

PRESSURE REGULATORS.

Kieley & MuellerNew York.
 Ross Valve Co.Troy, N. Y.

PROPELLER WHEELS.

American Ship Building Co.Cleveland.
 Atlantic WorksEast Boston, Mass.
 Cramp, Wm. & Sons.....Philadelphia.
 Detroit Ship Building Co.Detroit.
 Fore River Ship & Engine Co.Quincy, Mass.
 Great Lakes Engineering Works.....Detroit.
 Hyde Windlass Co.Bath, Me.
 Jenks Ship Building Co.Port Huron, Mich.
 Lockwood Mfg. Co.East Boston, Mass.
 Macbeth Iron Co.Cleveland.
 Milwaukee Dry Dock Co.Milwaukee.
 Newport News Ship Building Co.Newport News, Va.
 Phosphor Bronze Smelting Co., Ltd.Philadelphia.
 Risdon Iron WorksSan Francisco.
 Roelker, H. B.New York.
 Sheriffs Mfg. Co.Milwaukee.
 Superior Shipbuilding Co.Superior, Wis.
 Thropp & Sons Co., J. E.Trenton, N. J.
 Trout, H. G.Buffalo.
 United States Ship Building Co.New York.

PROJECTORS, ELECTRIC.

Bogue, Chas. J.New York.
 General Electric Co.Schenectady, N. Y.
 Westinghouse Electric & Mfg. Co.Pittsburg, Pa.

PUMPS FOR VARIOUS PURPOSES.

Blake, Geo. F., Mfg. Co.New York.
 Great Lakes Engineering Works.....Detroit.
 Kingsford Foundry & Machine Wks.Oswego, N. Y.
 Temple Pump Co.Chicago.

PUNCHES, RIVETERS, SHEARS.

Allen, John F.New York.

RANGES.

Russell & WatsonBuffalo.

REFRIGERATING APPARATUS.

Great Lakes Engineering Works.....Detroit.
 Roelker, H. B.New York.

REGISTER FOR CLASSIFICATION OF VESSELS.

Great Lakes RegisterCleveland.
 Record of American & Foreign Shipping.....New York.

REPAIRS—ENGINE AND BOILER.

(See also Boiler Manufacturers and Engine Builders.)
 Gogebic Steam Boiler Works.....Duluth, Minn.
 Marine Iron Co.Duluth, Minn.
 Forest City Boiler Co.Cleveland.

RIVETING MACHINES.

Allen, John F.New York.

RIVETS, STEEL, FOR SHIPS AND BOILERS.

Bourne-Fuller Co.Cleveland.

SAFETY VALVES.

American Steam Gauge Co.Boston.
 Ashton Valve Co.Boston.
 Crane Co.Chicago.
 Hayden Mfg. Co., N. L.Columbus, O.
 Lunkenheimer Co.Cincinnati.

SAIL MAKERS.

Baker, Howard H. & Co.Buffalo.
 Upson-Walton Co.Cleveland.
 Wilson & SilsbyBoston.

SALVAGE COMPANIES.

See Wrecking Companies.

SEARCH LIGHTS.

Bogue, Chas. J.New York.
 General Electric Co.Schenectady, N. Y.
 Westinghouse Electric & Mfg. Co.Pittsburg, Pa.

SHEARS.

See Punches, Rivets, and Shears.

SHIP AND BOILER PLATES AND SHAPES.

Bourne-Fuller Co.Cleveland.
 Otis Steel Co.Cleveland.

SHIP BUILDERS.

American Ship Building Co.Cleveland.
 Atlantic WorksEast Boston, Mass.
 Buffalo Dry Dock Co.Buffalo.
 Cramp, Wm. & Sons.....Philadelphia.
 Craig Ship Building Co.Toledo, O.
 Chicago Ship Building Co.Chicago.
 Detroit Ship Building Co.Detroit.
 Fore River Ship & Engine Co.Quincy, Mass.
 Great Lakes Engineering Works.....Detroit.
 Jenks Ship Building Co.Port Huron, Mich.
 Lockwood Mfg. Co.East Boston, Mass.
 Manitowoc Dry Dock Co.Manitowoc, Wis.
 Milwaukee Dry Dock Co.Milwaukee.
 Newport News Ship Building Co.Newport News, Va.
 Risdon Iron WorksSan Francisco.
 Roach's Ship Yard.Chester, Pa.
 Shipowner's Dry Dock Co.Chicago.
 Smith & Son, AbramAlgonac, Mich.
 United States Ship Building Co.New York.
 Willard, Chas. P. & Co.Chicago.

SHIP CHANDLERS.

Baker, Howard H. & Co.Buffalo.
 Marine Mfg. & Supply Co.New York.
 Upson-Walton Co.Cleveland.

SHIP LANTERNS AND LAMPS.

Russell & WatsonBuffalo.

SHIP TIMBER.

Martin-Barriss Co.Cleveland.
 Shurick, F. S.New York.

SMOOTH-ON COMPOUND, FOR REPAIRS.

Smooth-On Mfg. Co.Jersey City, N. J.

STAYBOLTS, IRON OR STEEL, HOLLOW, OR, SOLID.

Falls Hollow Staybolt Co.Cuyahoga Falls, O.

STEAM VESSELS FOR SALE.

Elwell, Jas. W. & Co.New York.
 Gilchrist & Co., C. P.Cleveland.
 Holmes, SamuelNew York.
 McCarthy, T. R.Montreal, Can.
 Weeks, F. H.New York.

STEAMSHIP LINES, PASS. AND FREIGHT.

American Line.New York.
 International Mercantile Marine Co.Philadelphia.
 Red Star LineNew York.
 United Fruit Co.Boston.

STEEL CASTINGS.

Macbeth Iron Co.Cleveland.
 Otis Steel Co.Cleveland.
 Seaboard Steel Casting Co.Chester, Pa.

STEERING APPARATUS.

American Ship Building Co.Cleveland.
 Chase Machine Co.Cleveland.
 Dake Engine Co.Grand Haven, Mich.
 Detroit Ship Building Co.Detroit.
 Hyde Windlass Co.Bath, Me.
 Jenks Ship Building Co.Port Huron, Mich.
 Marine Mfg. & Supply Co.Cleveland.
 Moulton Steering Engine Co.New York.
 Pawling & HarnischfegerMilwaukee.
 Sheriffs Mfg. Co.Milwaukee.

SUBMARINE DIVING APPARATUS.

Morse & Son, A. J.Boston.
 Schrader's Son, A.New York.

SURVEYORS, MARINE.

Gaskin, EdwardBuffalo.
 Hynd, AlexanderCleveland.
 Lovejoy, H. O.Buffalo.
 Matteson & DrakePhiladelphia.
 Parker Bros. Co., Ltd.Detroit.
 Nacey, JamesCleveland.
 Rice, HenryBuffalo.
 Steel, AdamCleveland.
 Wood, W. J.Chicago.

TESTS OF MATERIALS.

Hunt, Robert W. & Co.Chicago.
 Pittsburg Testing Laboratory Ltd.Pittsburg.

TILING, INTERLOCKING RUBBER.

New York Belting & Packing Co.New York.

TOOLS, METAL WORKING, FOR SHIP AND ENGINE WORKS.

Allen, John F.New York.
 Watson-Stillman Co.New York.

TOOLS, WOOD WORKING.

Atlantic Works, Inc.Philadelphia.

TOWING MACHINES.

American Ship Windlass Co.Providence, R. I.
 Chase Machine Co.Cleveland.

TOWING COMPANIES.

Donnelly Salvage & Wrecking Co.Kingston, Ont.
 Midland Towing & Wrecking Co., Ltd.Midland, Ont.

TRAPS, STEAM.

Kieley & MuellerNew York.
 Lunkenheimer Co.Cincinnati.
 Sturtevant Co., B. F., Jamaica Plain.Boston.

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| TUBING, SEAMLESS. | | Brown & Co..... | Buffalo. | Ashton Valve Co..... | Boston. |
| Shelby Steel Tube Co..... | Pittsburg, Pa. | Elwell, Jas. W. & Co..... | New York. | Lunkenheimer Co..... | Cincinnati. |
| VALVES, STEAM SPECIALTIES, ETC. | | Elphicke, C. W. & Co..... | Chicago. | WINDLASSES. | |
| American Steam Gauge Co..... | Boston. | Fleming & Co., P. H..... | Chicago. | American Ship Windlass Co..... | Providence, R. I. |
| Ashton Valve Co..... | Boston. | Gilchrist & Co., C. P..... | Cleveland. | American Ship Building Co..... | Cleveland. |
| Crane Co..... | Chicago. | Hall & Root..... | Buffalo. | Hyde Windlass Co..... | Bath, Me. |
| Jenkins Bros..... | New York. | Helm & Co., D. T..... | Duluth. | Jenks Ship Building Co..... | Port Huron, Mich. |
| Kieley & Mueller..... | New York. | Hawgood & Co., W. A..... | Cleveland. | Marine Mfg. & Supply Co..... | New York. |
| Lunkenheimer Co..... | Cincinnati. | Holmes, Samuel..... | New York. | WINCHES. | |
| Moore & Co., H..... | Milwaukee. | Hutchinson & Co..... | Cleveland. | American Ship Windlass Co..... | Providence, R. I. |
| Ross Valve Co..... | Troy, N. Y. | McCarthy, T. R..... | Montreal. | Hyde Windlass Co..... | Bath, Me. |
| VALVES FOR WATER AND GAS. | | Mitchell & Co..... | Cleveland. | WOOD WORKING MACHINERY. | |
| Ross Valve Co..... | Troy, N. Y. | Parker Bros. Co., Ltd..... | Detroit. | Atlantic Works, Inc..... | Philadelphia. |
| VARNISHES. | | Prindiville & Co..... | Chicago. | WRECKING AND SALVAGE COMPANIES. | |
| Detroit Varnish Co..... | Detroit. | Richardson, W. C..... | Cleveland. | Donnelly Salvage & Wrecking Co..... | Kingston, Ont. |
| Detroit White Lead Works..... | Detroit. | Sullivan, D. & Co..... | Chicago. | Midland Towing & Wrecking Co., Ltd..... | Midland, Ont. |
| Forest City Paint & Varnish Co..... | Cleveland. | Weeks, F. H..... | New York. | Parker Bros. Co., Ltd..... | Detroit. |
| New Jersey Zinc Co..... | New York. | WATER GAUGES. | | YACHT AND BOAT BUILDERS. | |
| Also Ship Chandlers. | | Bonner & Co., Wm. T..... | Boston. | Dreih, Thos. & Son..... | Wilmington, Del. |
| VENTILATING APPARATUS FOR SHIPS. | | Lunkenheimer Co..... | Cincinnati, O. | Lane & DeGroot..... | Long Island City, N. Y. |
| Bayley & Sons Co., Wm..... | Milwaukee, Wis. | VESSEL FURNISHINGS. | | Marine Construction & Dry Dock Co..... | New York. |
| Sturtevant, B. F. Co..... | Boston. | Meckes, John..... | Cleveland. | Truscott Boat Mfg. Co..... | St. Joseph, Mich. |
| | | Siegel Cooper Co..... | New York. | Willard, Chas. P. & Co..... | Chicago. |
| | | Sterling & Welch Co..... | Cleveland. | YAWLS. | |
| | | Williams & Rodgers Co..... | Cleveland. | Dreih, Thos. & Son..... | Wilmington, Del. |
| | | WIRE ROPE AND WIRE ROPE FITTINGS. | | Lane & DeGroot..... | Long Island City, N. Y. |
| | | Baker, H. H. & Co..... | Buffalo. | | |
| | | DeGrauw, Aymar & Co..... | New York. | | |
| | | Upson-Walton Co..... | Cleveland. | | |

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THE L. P. & J. A. SMITH COMPANY.

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| Dredging, | Dry Docks and | Bridges, |
| Harbor Work, | Pier Building, | Submarine |
| Pile Driving, | Railroads, | Foundations, |
| Breakwaters, | Canals, | Etc., Etc. |

Offices: Williamson Bldg., Cleveland, O.

The Fitz-Simons & Connell Co.

CONTRACTORS
—FOR—
PUBLIC WORKS

DREDGING
DOCKS
PILE DRIVING
BREAKWATERS

TUNNELS
CANALS
BRIDGES
FOUNDATIONS

Offices: 1010-1014 Tacoma Building, Chicago.

Dunbar & Sullivan Dredging Co., of Buffalo, N. Y.

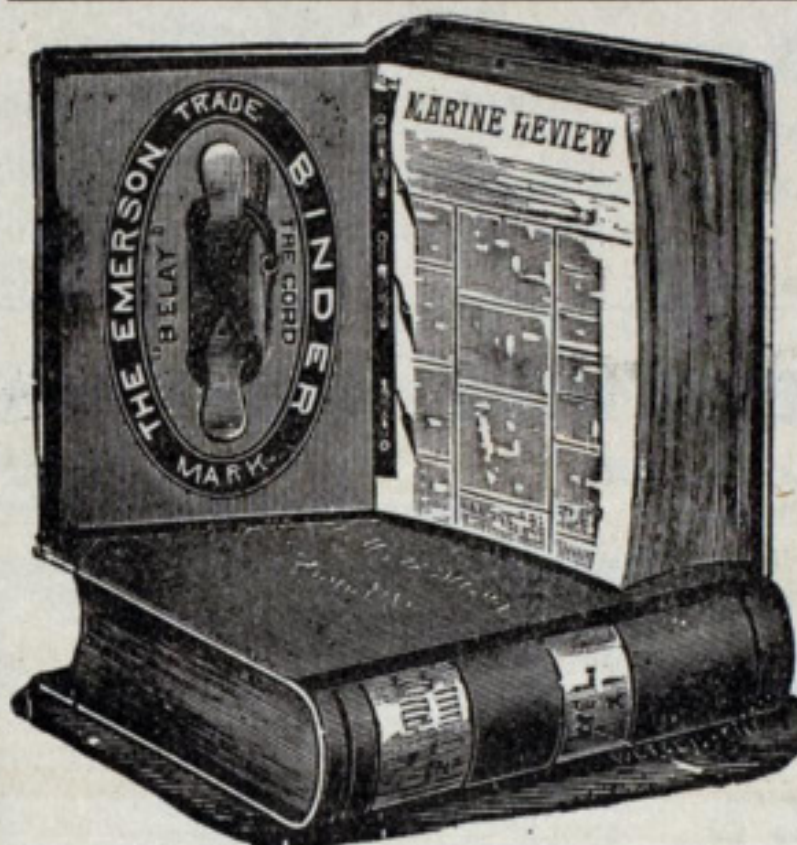
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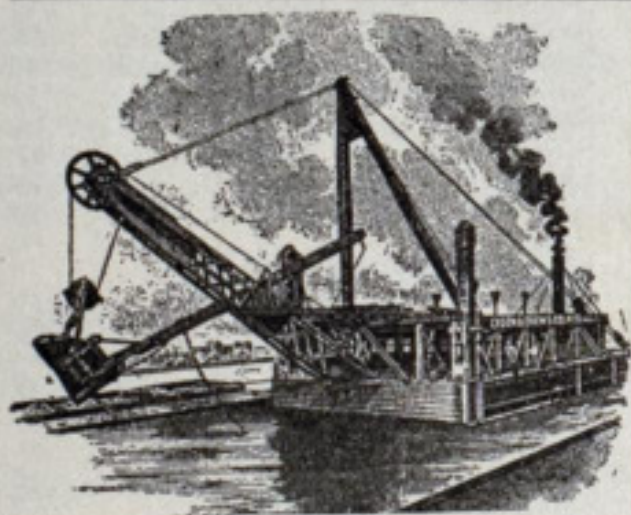
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| No. 18, Southwestern Lim | | | *1:50am |
| No. 22, Lake Shore Lim... | | *2:12am | *2:20am |
| No. 20, Chi & Cleve Ex... | | *7:20am | |
| No. 28, N Y & Bost Ex... | | *7:40am | *8:00am |
| No. 40, Toledo & Buff Ac. | | †10:00am | †10:40am |
| No. 32, Fast Mail... | | *11:25am | *11:30am |
| No. 48, Ac via Sandusky... | | †11:40pm | |
| No. 44, Cleve. & N. Y. Sp. | | | *3:00pm |
| No. 46, Southwestern Ex. | | | *3:10pm |
| No. 116, Conneaut Accom | | | †4:30pm |
| No. 6, Lim Fast Mail... | | *5:40pm | *5:45pm |
| No. 26, 20th Cent Lim... | | *7:40pm | *7:43pm |
| No. 10, C., N Y & B Sp... | | *7:30pm | *7:50pm |
| No. 16, New Eng Ex... | | *10:30pm | *10:35pm |
| No. 2, Day Express... | | †9:10pm | †9:25pm |
| No. 126, Norwalk Accom. | | †8:10am | |
| Westward. | | Arrive from East. | Depart West. |
| No. 11, Southwestern Lim | | *3:25am | |
| No. 7, Day Express... | | | *6:00am |
| No. 15, Bost & Chi Sp... | | *3:05am | *3:15am |
| No. 19, Lake Shore Lim... | | *7:05am | *7:15am |
| No. 23, Western Express. | | *10:30am | *10:35am |
| No. 29, Southwestern Sp. | | †11:10am | |
| No. 33, Southwestern Ex | | *12:25pm | |
| No. 133, Cleve & Det Ex... | | | *12:45pm |
| No. 47, Accommodation... | | †11:00am | †3:00pm |
| No. 141, Sandusky Accom. | | | †3:10pm |
| No. 43, Fast Mail... | | *4:35pm | *4:40pm |
| No. 127, Norwalk Accom... | | | †5:10pm |
| No. 37, Pacific Express... | | *6:50pm | *7:20pm |
| No. 3, Fast Mail Lim... | | *10:50pm | *10:55pm |
| No. 115, Conneaut Accom. | | *8:30am | |

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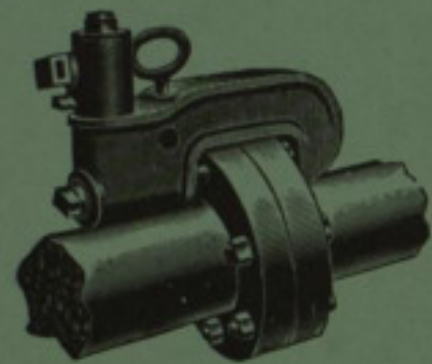
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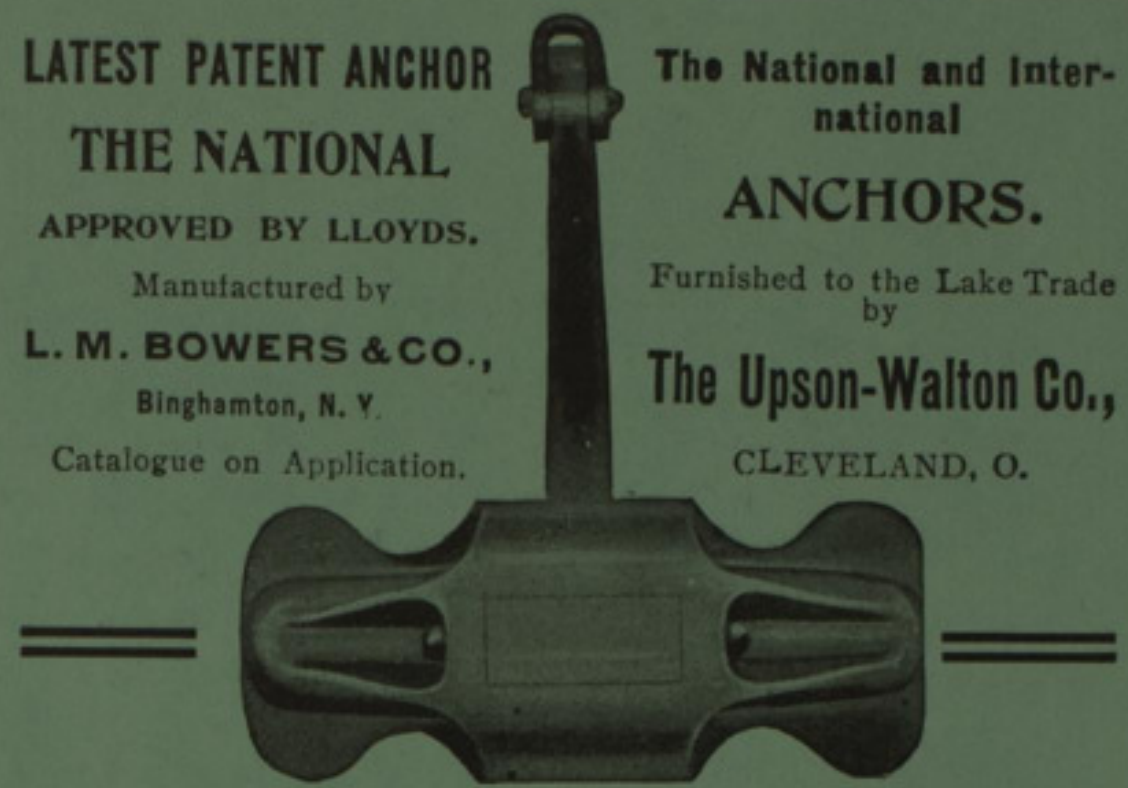
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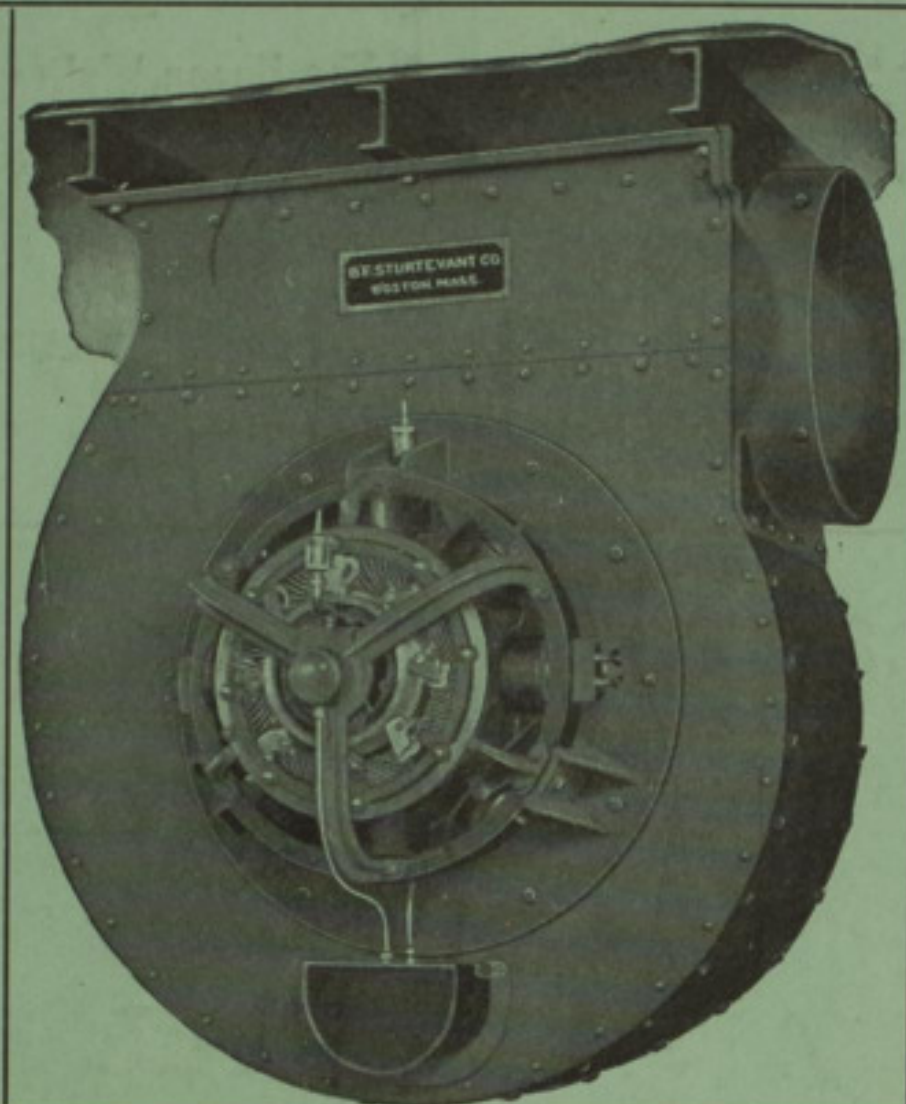
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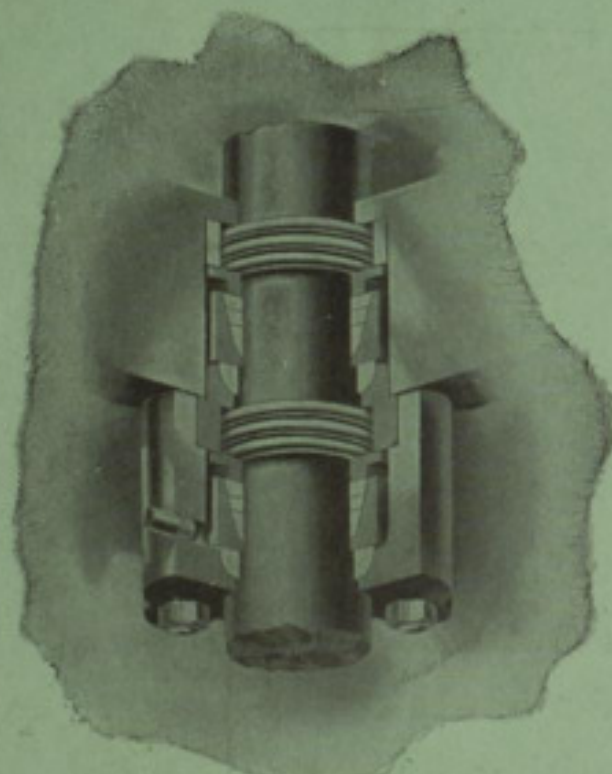
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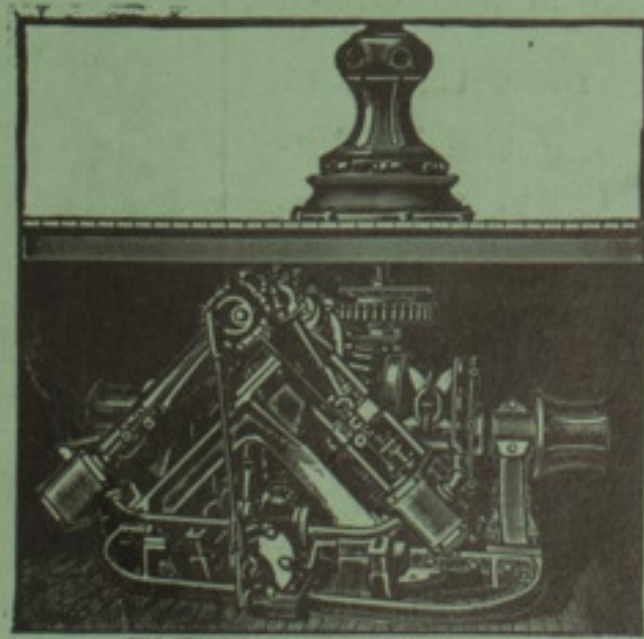
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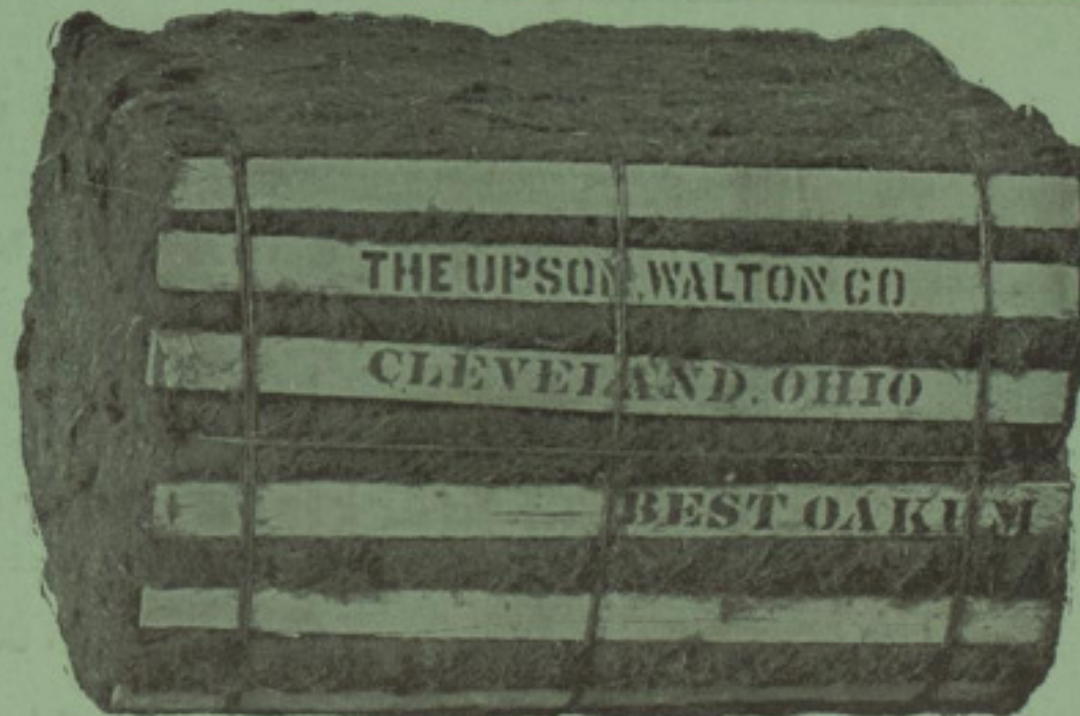
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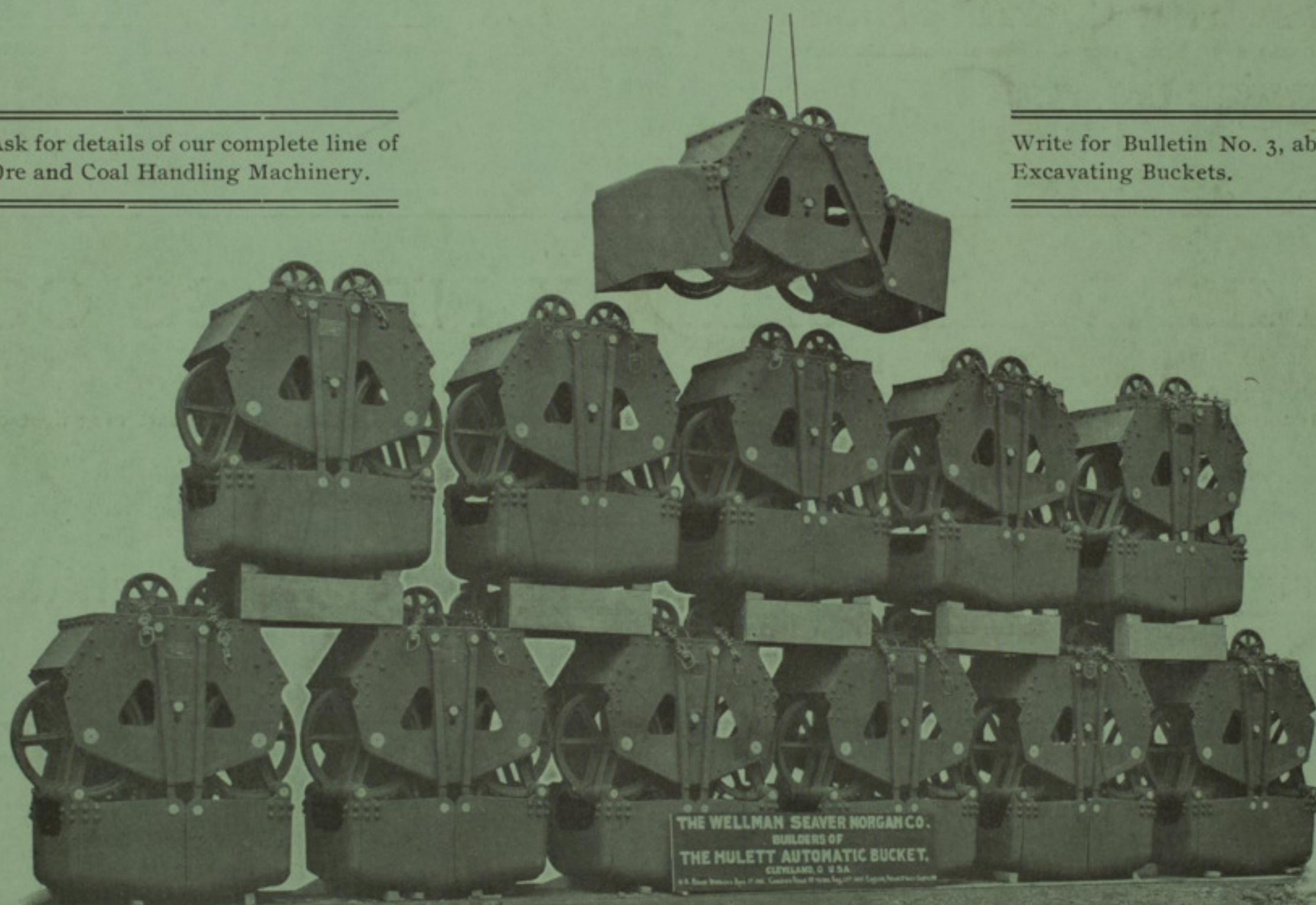
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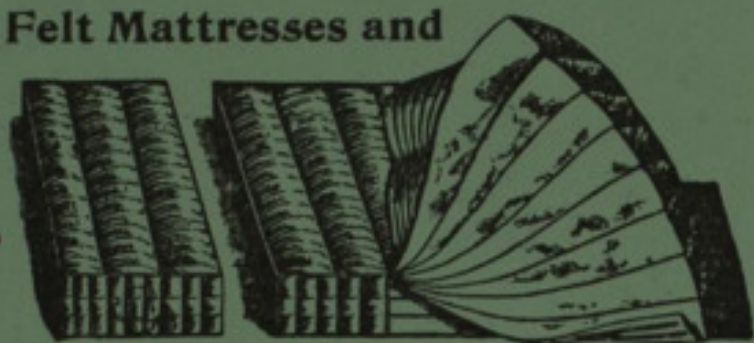
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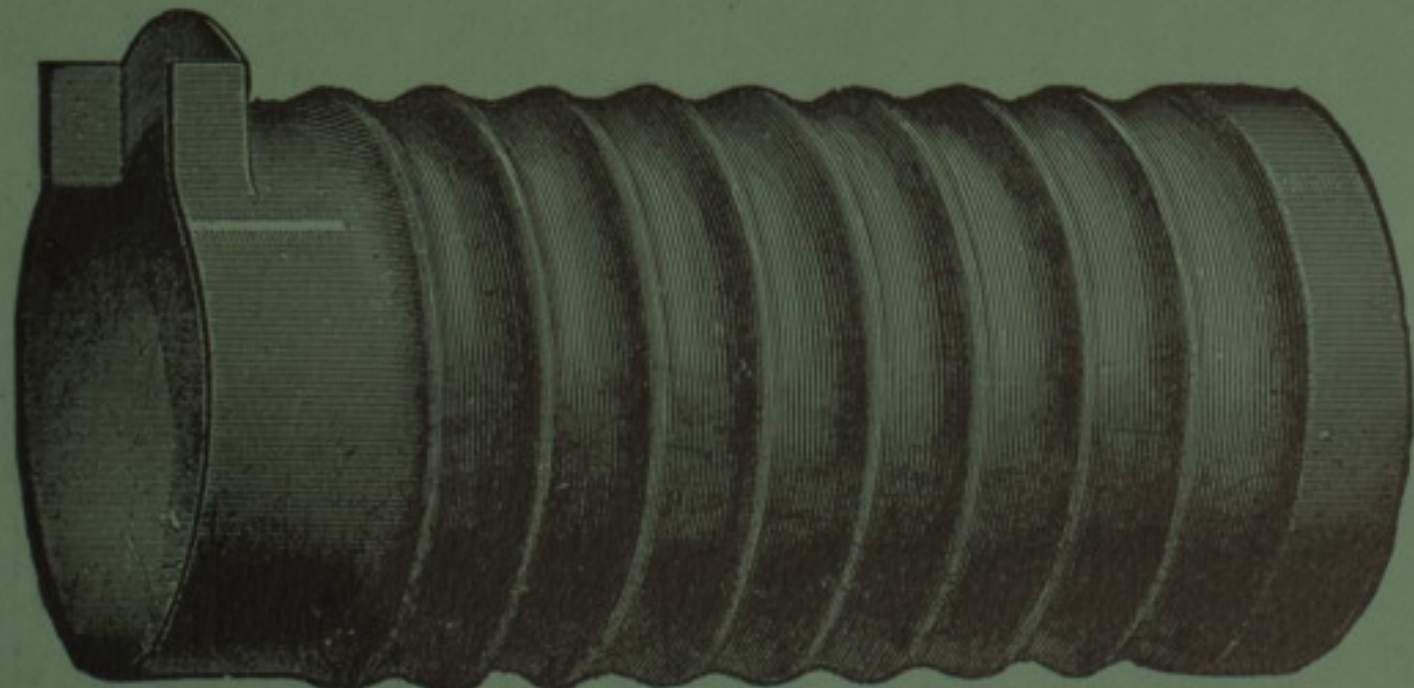
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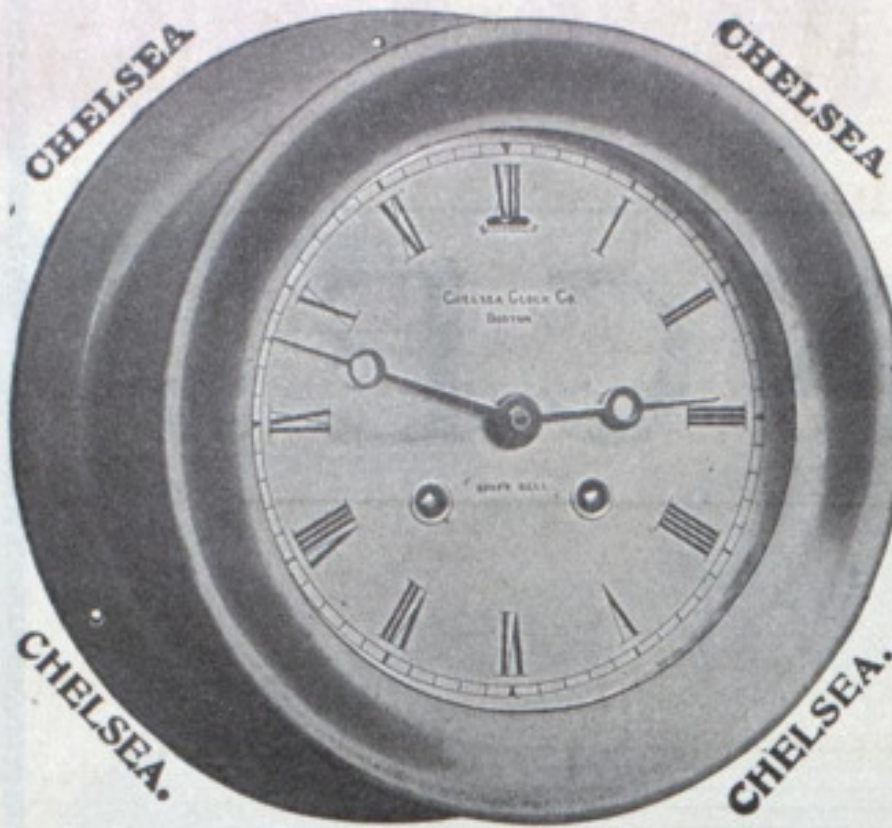
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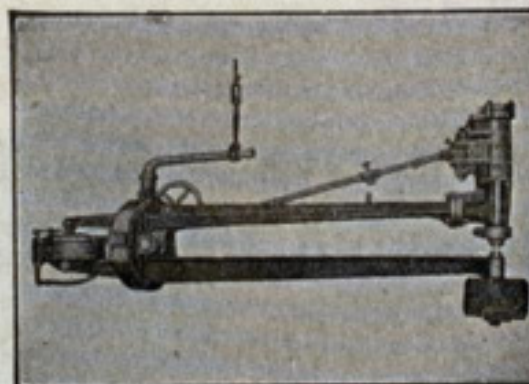
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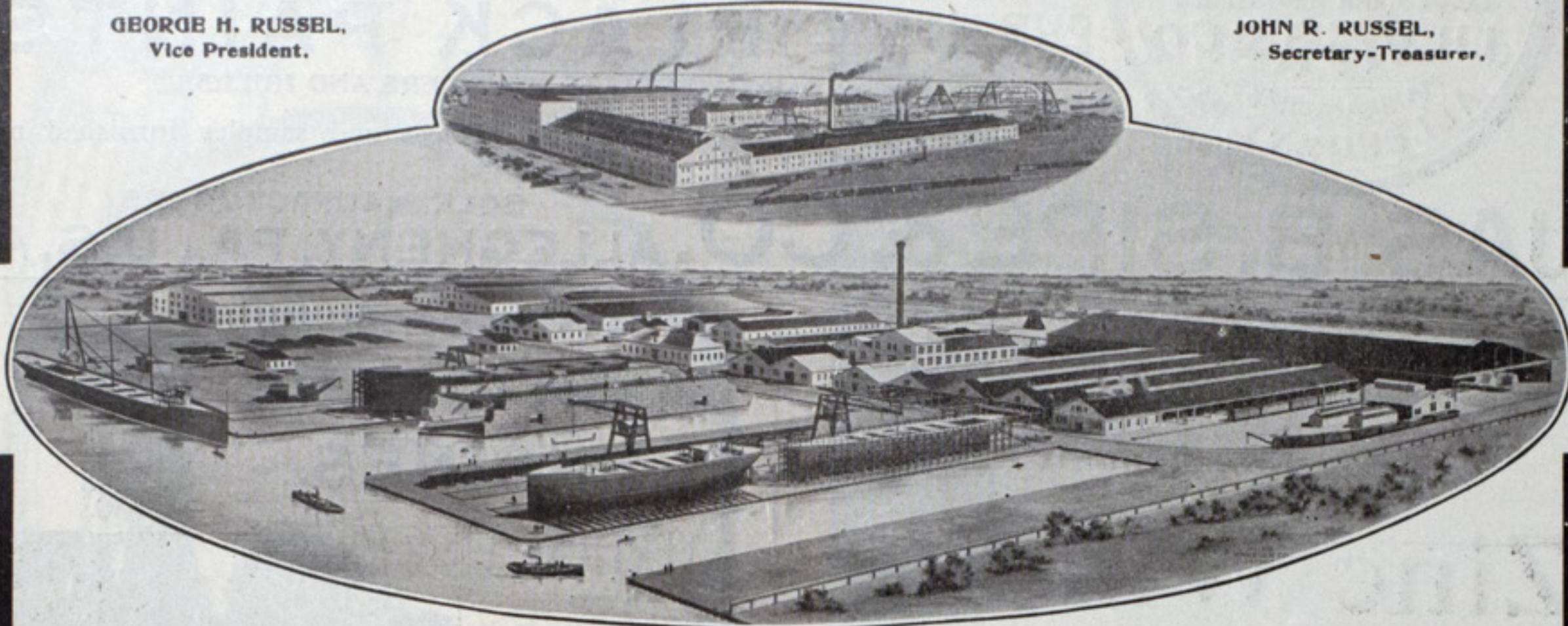
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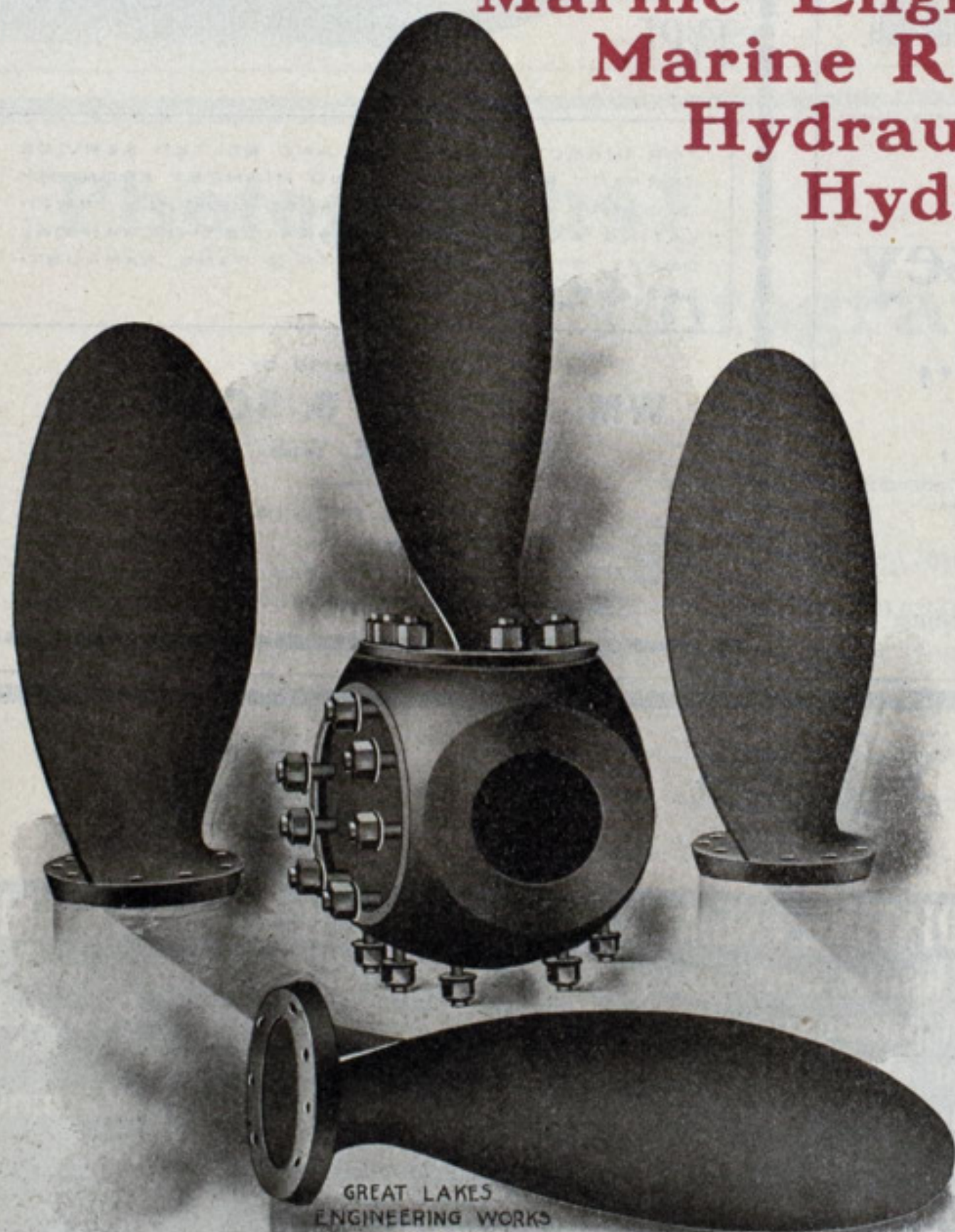
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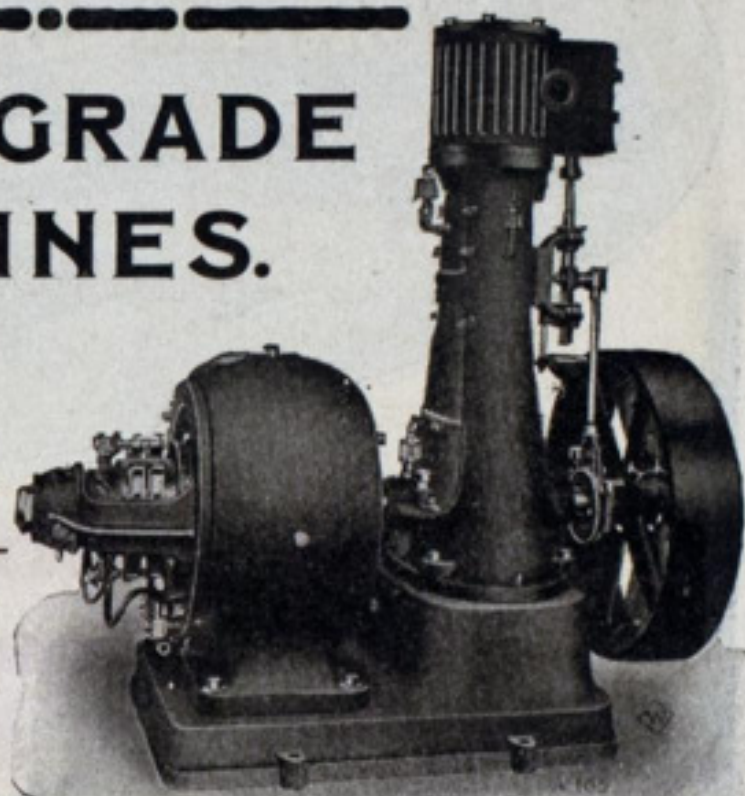
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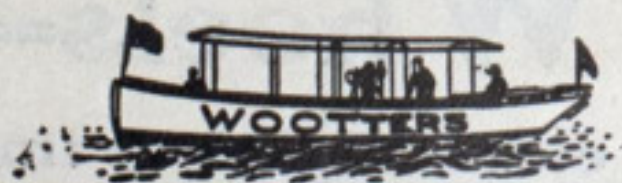


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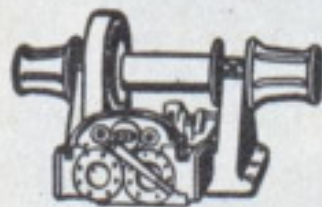
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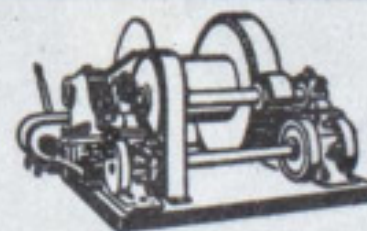
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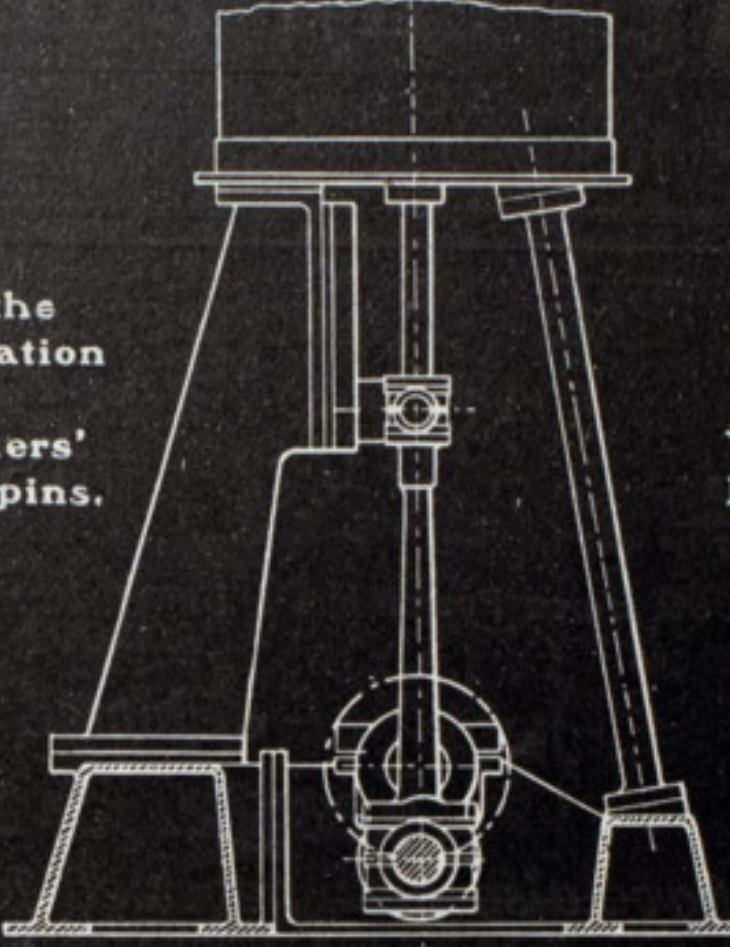
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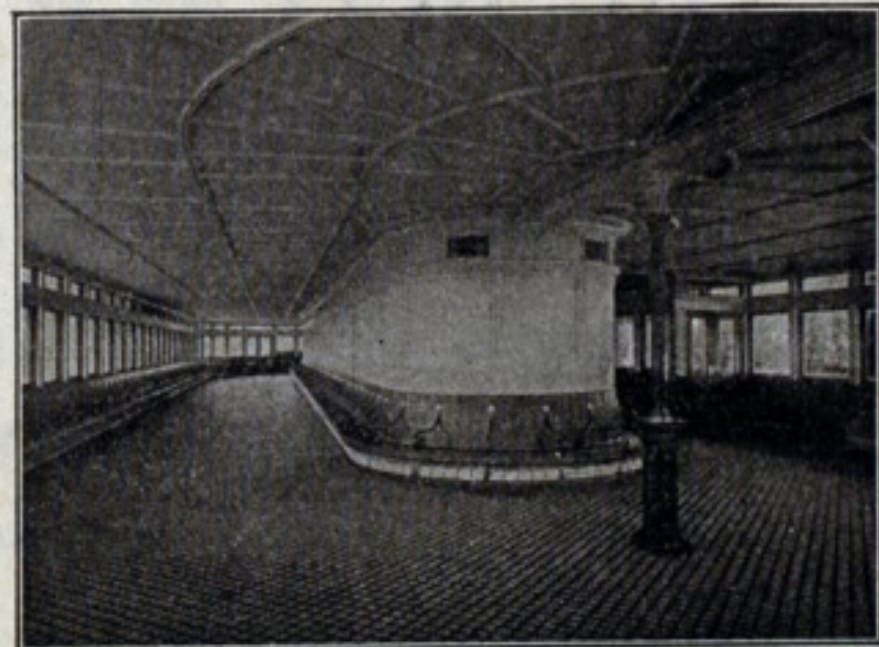
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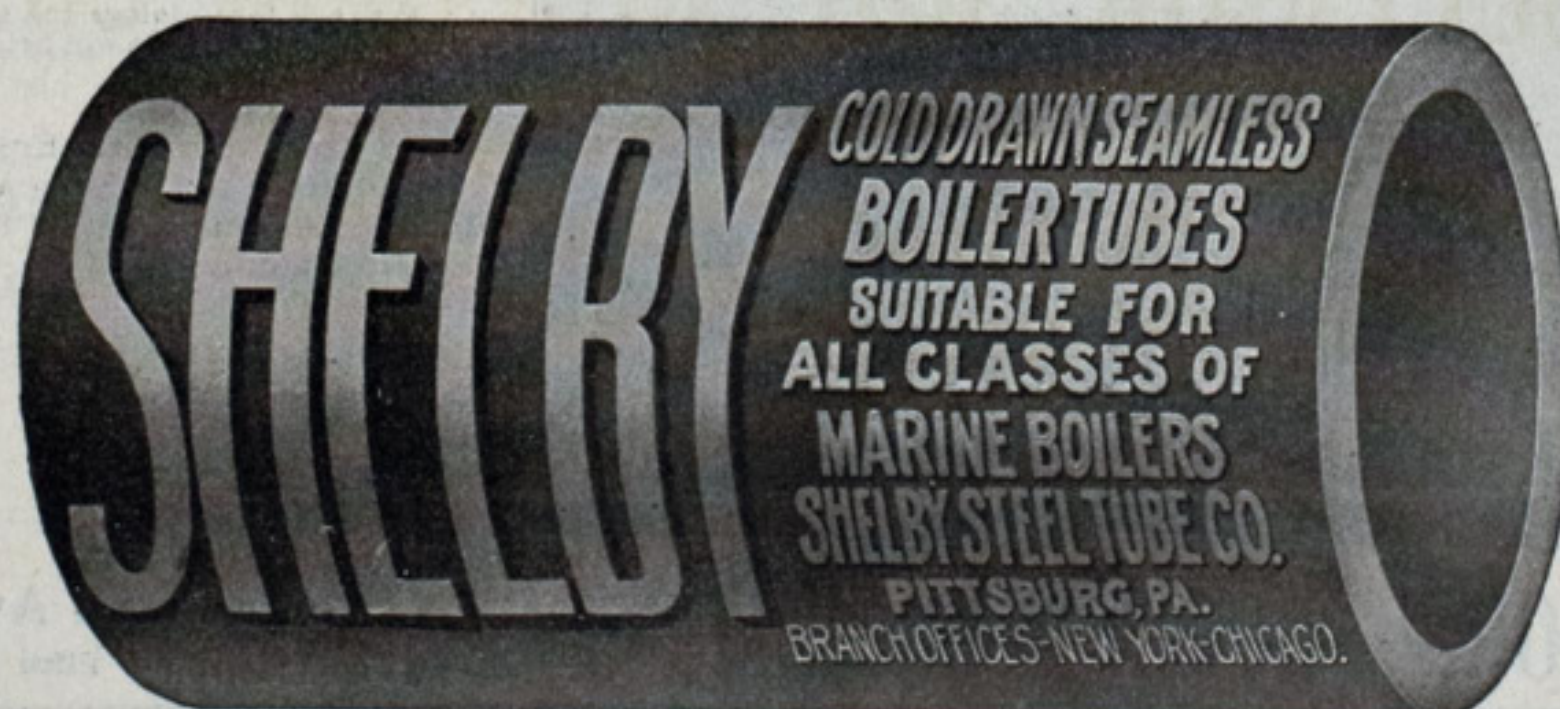
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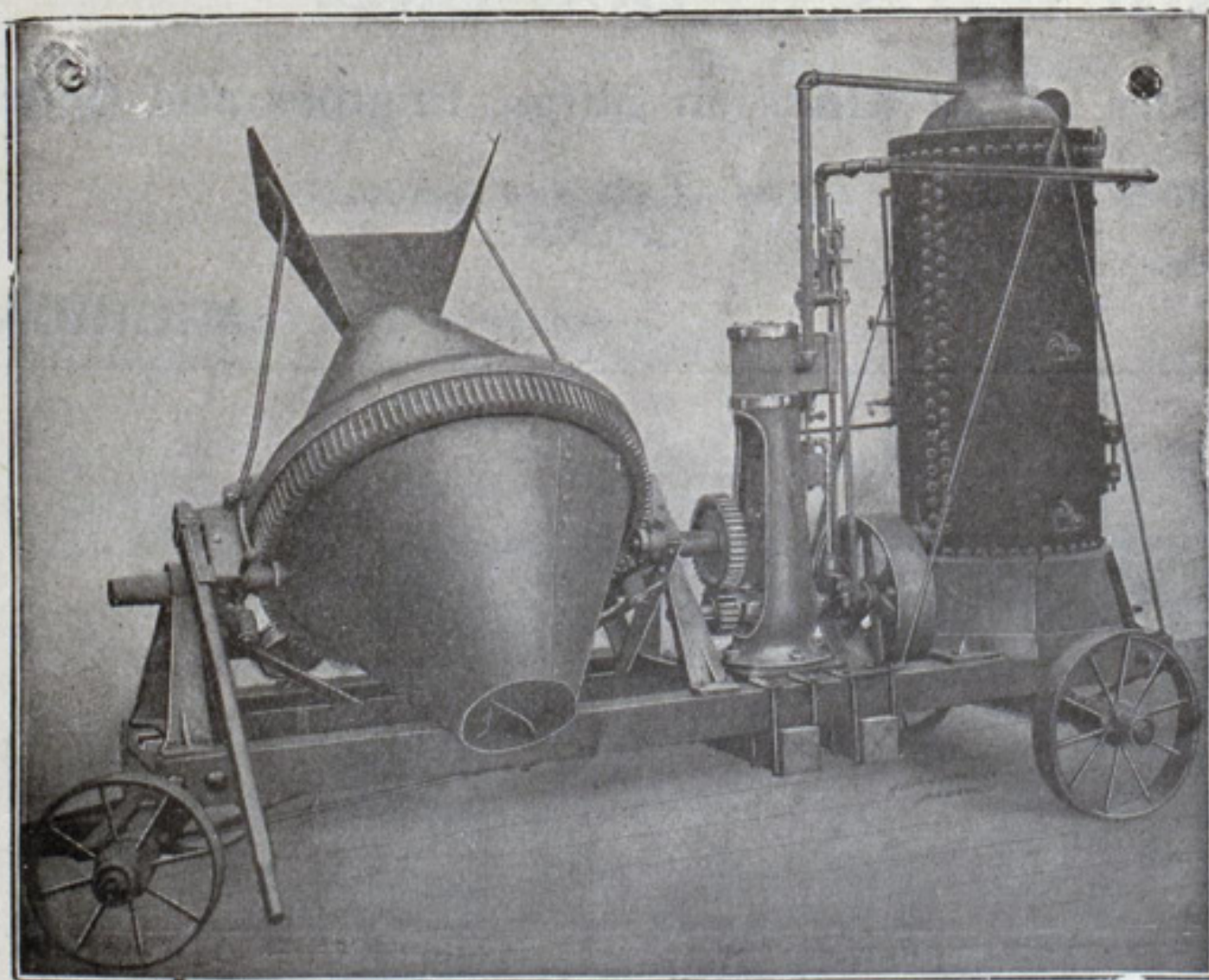
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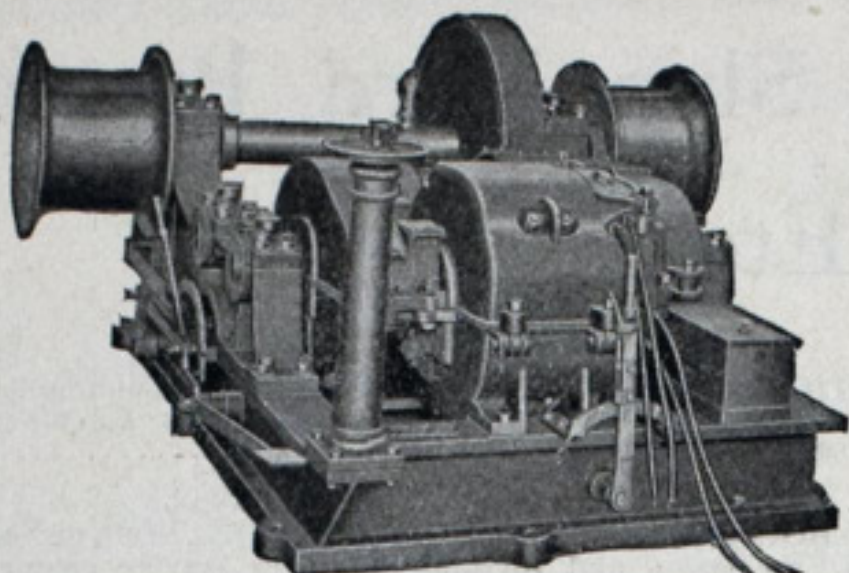
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